Remarks On Insanity: Its Nature And Treatment (1851)

Henry Monro

REMARKS

ON

INSANITY:

ITS NATURE AND TREATMENT.

BY

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SYNOPSIS OF THE CONTENTS.

A SYLLABUS OF THE ARGUMENT.

THE theory laid down in these remarks is—that insanity is a disease of loss of nervous tone; that this loss of nervous tone is caused by a premature and abnormal exhaustibility of the vital powers of the sensorium; that this infirmity is essentially a local one, though torpor of the general, physical, and vital powers assists it; and that its origin is to be esteemed constitutional, congenital, and frequently hereditary.

As a part of, and arising from this theory, the *coincident excesses* and *deficiencies* of mental phenomena manifested by the insane are attributed to the *coincident* existence (in different parts of the sensorium) of those two stages of loss of nervous tone,—*irritable excess of action* and *paralysis*. This view of the case renders it unnecessary to believe that the violent excesses of the insane must arise from a too sthenic condition of the system,—a doctrine which experience so much contradicts, but which the want of experience so often propagates.

This subject is discussed in four chapters.

PART I.

CHAPTER I.

Contains—

1. Some introductory remarks on the classification of the insane.
2. Arguments for the corporeal nature of insanity.
3. A detailed definition of the above theory, with some general remarks on the theory.

CHAPTER II.

Is intended to support the *probability* of the truth of the two propositions given above (namely, that insanity is a consequence of loss of nervous tone; and, that the loss of nervous tone arises from an abnormal exhaustibility of the vital powers of the sensorium) by a comparison of the history of insanity with the history of other imperfect conditions of the mind.

The imperfect conditions referred to are—dreaming, somnambulism, voluntary abstraction of mind, passion, the mind of infancy, senile imbecility, intoxication, fever, states of imperfection of mind arising from various internal and external causes.

PART II.

CHAPTER III.

The probabilities referred to in the two first chapters are *substantiated* by the consideration of the actual physical condition of the insane. The chapter contains—

1. A syllabus of the preceding chapters.
2. A discussion of the relation the condition of the vascular system in insanity appears to hold to the disease; with

the conclusion that its general history confirms rather than contradicts the theory adduced.

This subject is discussed under the three heads of—

1. Inflammatory action.
2. Deterioration of the blood.
3. The blood viewed as a means of mechanical pressure.

3. A consideration of the state of depression of the general, vital, and physical powers manifested by most insane persons, which is also corroborative of the theory.
4. A digression on the keenness of sensibilities in some states of nervous and vital depression.
5. A consideration of the proneness of the female sex to insanity, also corroborative of the theory.
6. Some general conclusions arrived at from the statistics of Bethlehem Hospital, &c.

CHAPTER IV.

Contains a history of various cases where recoveries have been markedly connected with a treatment grounded on the above hypotheses; namely, the proper employment of the vital stimulants—air, exercise, diet, &c.

An Appendix, with Notes.

INTRODUCTORY REMARKS.

I HAD intended, as will appear from the foot-notes in the text, to offer explanations, in an introductory chapter, of passages which might appear unintelligible; but as such a course could but prove tedious to many, I have placed these explanations in notes at the end of this treatise.

There are, however, one or two points upon which I would speak as briefly as possible.

First, I would say a few words on the relation which I believe the question of morals to hold to insanity. I am the more anxious to be clear upon this subject, as an answer to questions which have been, and will be again, raised by those whose good opinion I desire. The questions I refer to are as follows:—

Does not the subject of moral discipline enter into the causes of insanity, so that by its wholesome use insanity might be avoided? Is insanity so wholly of a physical character that a person is as little accountable for the phenomena of the disease as he would be for the symptoms of any other bodily disease?

Among the various sources of mental obliquity, we cannot but recognise three most distinct origins. Now the important question is, From which of these do insane phenomena emanate? First, there is one wholly independent of physical considera-

tions,—namely, spiritual agency of an evil nature. Secondly, one in which the body acts, as it were, a secondary part, and where it is made instrumental to such evil spiritual agency,—as where our animal functions and propensities are perverted, and the baser parts of our being made to rule over the more honourable. Thirdly, one which is wholly and primarily of bodily origin, into which the question of morals does not enter,—as where the brain, the mental instrument, acts imperfectly, disturbing manifestations, and obtruding (as all bad instruments do) its own instrumentality and imperfections. *My belief and conviction is, that insanity is essentially dependent on this last source of mental obliquity.*

But when I say that insanity is beside the question of morals, I mean full and completed insanity. There are many shades short of this, where care, restraint, and confinement, are necessary, but yet where (strictly speaking) insanity is not complete, and where, in consequence, morals have some place. The complete maniac lives in a waking dream,—he raves without power to stop himself, without the power to appreciate the necessity of stopping himself; he is completely the victim, not in the least the master of the strongest impressions uppermost in his fancy. The partially insane person, on the other hand, will restrain himself, though probably with a great effort, on occasions where he thinks such restraint advisable,—as before strangers, &c. As varying degrees of this state, take the following instances. I asked a young gentleman the other day, why he did not restrain the absurd grimaces and gestures (which he was observed by his attendants to be constantly making) as much in my absence as in my presence; he answered with great ingenuousness that he felt the long continuance of such restraint intolerable, though he saw the propriety of it. A young lady, after her recovery, told me that she felt throughout her illness that she could have restrained her extreme acts of violence if she had chosen, but that at certain times such an attempt seemed intolerable, and so she gave way to her propensities when stimulated by heat of

head, &c. A medical man, a short time since, used to request me to keep him under restraint to prevent him from smashing everything about him. Such cases shew that mania is not complete, that the judgment and the power of self-restraint are not absolutely gone, though the attempt to exercise them is an intolerable labour. And I may add, that the majority of insane people (especially chronic cases) are able by a greater or less degree of exertion to restrain their insane impulses on occasions. And thus, while a complete maniac is wholly an irresponsible being, and little if at all susceptible of moral discipline, partially insane persons are only irresponsible in proportion as they have really lost all power of control over their propensities, and are fit subjects of moral discipline. Morals, again, are concerned very often in the accession of disease, and a person is responsible during the earlier stages for non-resistance of propensities; whereas he becomes irresponsible after the disease is complete.

Persons are liable to be confused on these simple matters when commenting upon insanity, though they see the truth plainly enough when the agent causing delirium is more manifest. Every one knows that a man completely intoxicated is an irresponsible being for the time, though he is responsible while getting drunk, and responsible to a certain extent in the lesser degrees of intoxication. Of course, by this analogy I do not mean to say, that to become insane necessarily involves a question of morals, as much as to become intoxicated does; for in the latter case both the act and the result are clearly forbidden, and able to be avoided; whereas in the case of the person *most* responsible for disregarding the stimuli to insanity, the acts are comparatively unknown and comparatively unforbidden, and in very many cases no precautions could have prevented the disease, which arises from a loss of nervous power occasioned by the most simple wear and tear of the most ordinary life. All this explanation will, I know, appear superfluous to the enlightened medical man, for he may be supposed to be willing to place insanity on the same footing as

drunkenness, dreaming, or any other condition of mind produced evidently by physical causes.

The fact that a state, when absolute, is removed beyond the question of morals, though slighter degrees of it are still subject to moral laws, pervades our history. In the case of the appetites and desires, a gluttonous craving after food for food's sake is wrong; but hunger, from absolute want of food, is beyond the question of morals. In the case of abnormal affections, the same truth holds good; absence of mind in the slighter forms is wrong, because controllable, but its extreme of waking trance is beyond the question of morals; irritability of mind, again, arising from slight ailments, is wrong, whereas the furor of fever is not so; the question of right and wrong in all these cases depends, of course, upon the degree of power of control that the will possesses over the other mental operations.

I would say a few words of apology for the somewhat crude manner in which certain propositions are laid down in the first chapter of this essay. All medical men are accustomed to the theory that insanity is a consequence of loss of nervous tone; and this theory, as well as the probable cause of this loss of nervous tone, forms the chief point of this treatise. But in the first chapter, and again in the last, I have carried out this theory into the proposition that all insane phenomena may be ascribed to the two well-known consequences of loss of nervous tone (acting coincidently),—namely, excess of nervous energy or irritable accumulation, and paralysis or loss of nervous energy. In the first chapter I lay down this pathological proposition; in the last I base my treatment on the equalization of this disturbed force,—namely, by a course which will subdue excess, and raise depressed tone,—such as the due employment of *air, exercise, and diet*. This proposition escapes both the honours and anxieties of originality much more than may at first appear; for all the originality it can pretend to is, that by it ordinary modes of thought and expression are a little defined

and insisted upon. For when we speak of nervous excitement as accounting for impetuosity and violence, or nervous torpor and decay as accounting for mental imbecility, &c., we refer to a theory out of which the above proposition very properly grows. Again, the assumption contained in the theory that the abnormal acts of the insane are all to be accounted for by the combined influence of excess and deficiency, is certainly not very great; for I suppose almost any abnormality, if *well and radically analysed*, could rest on such a broad basis as the separate or combined agency of "too much" and "too little" could effect. Such wholly *anomalous* cases, indeed, as *monomaniacs* (when they are genuine, which is more rare than is usually believed to be the case) are, as I shall hereafter show, difficult to be accounted for on this theory; but perhaps they are not more unaccountable on this than on any other theory.

This proposition, however, arose from the circumstance of my attention having been much drawn to the paradoxical though most interesting results of loss of nervous tone in the motor system of nerves; *and believing as I do that insanity is simply a disease of the nervous instrument of mind*, I was naturally led to see how far the mental excesses and deficiencies of insanity could be accounted for by the same rules that account for spasm and paralysis of motion. For, however much the spiritual being, mind, may differ essentially from such functions performed or controlled by nervous agency—as motion, nutrition, &c., yet as each uses a common instrument,—namely, nervous matter, and as this mechanism is of the same nature, subject to the same infirmities, and intimately connected in its various parts both by sympathies and continuity, we must believe that, *so far as the various phenomena presented through nervous instrumentality are really dependent on this similar mechanism*, similar results are to be anticipated. The boundaries, however, between what may properly be esteemed as belonging to nervous temperament, on the one side (that changeable thing which is affected by every

change of the physical frame), and to abstract mind, on the other, are so little defined, or, I may add, able to be defined, the distinction between physics and metaphysics so mysterious, the laws of nervous energies so little ascertained, and the danger of losing ourselves, and misleading others, so great while treading on the mysterious neutral ground of mind and matter, that any attempt to define the consequences of loss of nervous tone, and to apply them to mental phenomena, must appear comparatively unsatisfactory, the more we inquire and reflect, and the subject only permits of general statements, which are interesting *only so far as they conduce to practical results.* That the apparent crudity of what I have stated may be pardoned *on the plea of its practical aspects,* is, however, all that I can hope for from the learned reader of this treatise, should I have the happiness to gain his attention.

I have been urged by circumstances to divide this essay, or let me rather say these remarks, into two parts. And I would conclude with saying, that I hope the more practical nature of the second part may in some degree compensate for the somewhat too metaphysical and vague character of the early chapters.

H. M.

16, *Queen Street, May Fair,*
Oct. 1850.

N.B. The example of motion given at page 7 is of course no analogy, only an illustration, and its weight as an argument is of course only negative.

The term "mental health" (page 8) refers to the right action of abstract mind.

The monthly periodicity, referred to at page 40, is to be connected with revolutions of the moon round the earth, not the earth round the sun.

ON INSANITY,

VIEWED AS A DISEASE OF DEFICIENT NERVOUS TONE CONSEQUENT ON LOSS OF VITALITY.

CHAPTER I.

GENERAL DEFINITION OF THE PATHOLOGY.

Introductory remarks on the classification of the insane—Arguments for the corporeal nature of insanity—Definition of the pathological theory—General remarks on the theory.

Introductory remarks on the classification of the insane.—I look forward with much hopefulness to the prospect of arriving soon at a more perfect knowledge of the nature and treatment of insanity; but until a real pathology, founded upon facts, is laid down for our guidance, but little of that cloud which has hitherto enveloped the affection can be removed, and consequently little real advance in treatment effected. All who have charge of asylums must well know how very different the clear and distinct classification of books is from that medley of symptoms which is presented by real cases, where each case seems to bear so peculiarly its own idiosyncrasies of detail, as hardly to allow of very minute division. In taking a general view of the cases which appear in an extensive lunatic asylum throughout the year, I should say that the best divisions are as

follows: 1. Acute stages of active insanity; 2. Chronic stages of active insanity (both of these stages manifesting varieties of form; namely, in some, general delusions, in others partial; in some, great excitement, in others great depression; in some, intermitting paroxysms, in others continued; in some intellectual derangement, in others only moral); and 3. The imbecile stage, or the state of wreck after the storm has passed.

In a practical treatise I prefer this classification of stages of insanity, rather than the ordinary one of the forms and varieties of the disease, as I believe it to conduce the best to that great object of all pathological diagnosis—namely, treatment; for there is great utility in dividing an acute case, where the symptoms of bodily ailment are very distinct, and the disease of recent origin, from a chronic case, where, though the mental excitement and derangement may still be active, yet the bodily functions are reduced to pretty good order, and the disease of the mind (not rallying with the returning health of the body) has assumed an habitual character: again, there is much interest, both of prognosis as well as diagnosis, in dividing both these classes of active disease from the nearly hopeless and comparatively irremediable condition of imbecility. Such divisions at least convey to us different degrees of hope, and different indications for practice. On the other hand, to be nice in dividing instinctive insanity from moral insanity, and both of these from intellectual insanity, is a subtlety more easily accomplished in books than in practice, and more useful in a legal than in a medical point of view. Again, to divide one sort of dementia from another—to go the length M. Esquirol has, and distinguish imbecility by four stages—1. Loss of memory; 2. Loss of reasoning powers; 3. Loss of mental comprehension; 4. Loss of instinctive appetency,—is curious rather than useful; and, if the further conclusion is arrived at (which is sometimes hinted) that each sufferer is likely to pass through these several stages, I should say that experience tells another story, namely, that most persons having fallen into one state remain in that

state or stage immoveably for years, or even a whole life. I do not mean to say that the forms do not exist, or the stages run into one another occasionally, but I think books would convey wrong impressions on these matters, and must add that I believe these varieties are specified quite as much from physiological reasoning of what ought to be, as from pathological manifestation of what really exists. In points of minute detail, I believe I may say with truth, that cases differ from one another to even a greater extent than individuals do in sane life; and this is very natural, for in the latter case idiosyncrasies are harmonized and toned down by general rules of a social, political, or religious character, which the possession of power over the will places upon the conception of ideas or images of the mind; while in the former, the absence of such a check causes individual peculiarities to grow so extravagantly, as to make any attempt to compare this with that case (in the detail of their thoughts and actions) impossible. I do not say this inconsiderately, but from the result of an experience of about six years duration in the care of an extensive lunatic asylum, during which time I have in vain tried to classify cases to any practical purpose on a more rigid plan than I have mentioned above. It is useless to attempt to paint pictures with more vivid colours than nature presents, and worse than useless if practical men (or rather, I would say, men obliged to practise) receive these pictures as true representations. It is true that, if they are received with caution, these attempts may assist to fix the attention of a novice on the phenomena of the disease, as he will try to connect fiction with reality; whereas, if the fiction did not exist, perhaps the Babel of an insane hospital would so confound him, as to cause him to slide into the old and easy plan of looking on insanity as a mysterious affection, beyond the scope of discriminating science, and therefore equal to moral death.

Arguments for the corporeal nature of Insanity.—What we want much more than any definition of varieties or stages of the disease, is some insight into the nature and causes of insanity. This subject has been more or less uninvestigated hitherto. Some authors look upon it as a closed book; others have viewed it as a subject whence nothing satisfactory can arise. I would speak briefly upon this head. Some authors seem to think that the state of the mind is little dependent on the state of the body; and these of no mean name and weight in the world. I will quote from an author who obtains universal respect. Dr. Abercrombie says, (p. 248 of the 13th edition of his work on the Intellectual Powers,) "of the nature and causes of that remarkable condition of the mental faculties which gives rise to the phenomena of insanity, we know nothing." Again, (p. 254) "attempts have been made to refer insanity to disease of the bodily organs, but hitherto without much success; in some instances we are able to trace a connexion of this kind, but in a large proportion we can trace no bodily disease." The tendency of these observations is certainly discouraging to the view of connecting insanity with bodily disease acting on the nervous instrument which the mind employs for its manifestations: as a practical observer, as well as one interested deeply in psychological research, I must dissent from such an inference, for the following reasons:—

1. The practical observations of the physiology of health, as well as the results of disease and experiment, show us that mental manifestations are dependent on and influenced by the varying conditions of the body; that there are certain nervous centres which are peculiarly the seats of mental phenomena; that these nervous centres are intimately connected with the general system by means of the vascular system, so that the least interruption of the latter will cause a corresponding interruption to the consciousness of mental phenomena; thus the thoughts wander and are confused, when the circulation is slightly retarded, as in vertigo; or become apparently more or

less extinct for a time, when more retarded, as in syncope;* that they are intimately connected with the other nervous centres, such as the sympathetic and reflex, by means of nervous fibres, which act as conductors of impressions, and that by this means a suffering stomach will cause a suffering brain, as we well know in what we call sick-headache; that through the vascular and nervous systems certain drugs and other ingesta will for a time paralyse more or less the manifestations of mind, or at least all those phenomena of mind of which we are able to take cognizance—witness the effect of opiates, &c., remedies which we know to influence the whole nervous system alike, whether the more physical or more mental parts of it; that insanity (particularly in the incipient and acute stages) is marked continually by the coincident circumstance of great bodily derangement, as I shall show hereafter; that as this bodily derangement departs, the mental derangement, in the majority of cases, departs also; to say nothing of the fact that a great hope of

* I must here observe, that it is beyond our capacity to say whether or no all mental phenomena ever rest, or are suspended; indeed, there are many reasons to think that those periods, which we are accustomed to look upon as seasons of unconsciousness—(such as profound sleep, coma, syncope, &c.)—should be rather termed periods of oblivion, or suspension of memory only, and not of all mental faculties. The well-known fact, that many dreams must occur which are not in the least remembered, as when people talk in their sleep coherently enough, and yet, when awake, are not conscious of having dreamt at all, corroborates this idea. As a proof of how completely oblivion may rest on certain periods of even active life, witness that very remarkable circumstance connected with some cases of paroxysmal insanity, where the sufferer, in the lucid intervals, can only remember the facts of former lucid intervals; and, in the paroxysms, can only remember the facts of former paroxysms. There can be no doubt, however, that sensibilities are much decreased as consciousness (in the ordinary sense) lessens, as we may know from the testimony of persons under the partial effects of chloroform, who declare, both during and after the influence of this agent, that they perceive and know everything that is going on, though their sensibility and perception are much deadened. In the following pages, however, I shall generally speak as if it were acknowledged, that consciousness is suspended in profound sleep, coma, &c.:—this I do because I presume it to be the generally received opinion, as well as the most probable one; and at least, memory is suspended.

treatment is cut off if we do not look on insanity as having its origin in bodily disease.

The person who repudiates the idea of the physical nature of insanity in its various stages of delirium and imbecility, should also repudiate the doctrine of the physical nature of the delirium of fever, and the imbecility of old age; for though insanity is a specific disease in some of its aspects, yet in most points, at a certain stage, it is so allied to the conditions of mental phenomena in fever, and at a certain other stage to those of old age, that it is nearly impossible to make any psychological distinctions between them. Neither, indeed, do I see why he should not repudiate also the idea that the condition of a born idiot is dependent on bodily defect; and I do not see how he can help coming to the further conclusion that the abstract mind (a being not subject to decay) of a Cretin is a different sort of mind from that of other people. Surely this is a dangerous doctrine, and one much more rife with peril than the one which ascribes mental imperfections to disease, or other disabling circumstances of the body. To sum up briefly, I would say, that such sources of insanity as hereditary predisposition; the particular liability of certain ages to the affection; its dependence on climate; its dependence on causes which manifestly primarily affect the body—such as pregnancy, the catamenial periods, heat of the sun, dissipation, &c. &c.; its alternations with other diseases, as phthisis, eruptive diseases, &c.; its frequent selection of what we call nervous temperaments for its attacks (where nervous susceptibility is shown in other nervous centres equally with those connected with mind); these and other such reasons assist in confirming the view that insanity is of corporeal origin: and I do not see why the physician (unless he is actuated by other motives than those alluded to above) should fear to derive the phenomena of insanity from the theory of nervous deficiency, any more than that he should fear to express the hope of quieting the mind by means which evidently operate on the body—such as opium.

2. I am not restrained from this theory by the arguments of moral philosophy, for my belief is, that these facts do not in the least interfere or come in collision with such arguments, if they are only placed in their right position; for, because I say that the body acts as an instrument by which the mind makes manifest its phenomena, and that, while this medium is used, it suffers with the body, I do not in the least identify the mind with the body, or confine its capacities to it. Let us take another act performed by means of the body, which is also the manifestation of a great principle, really external to and independent of all animal bodies*. Who would pretend to say that motion is identical with those changes in the muscular and nervous parts of animal mechanism, by the conjoint operation of whose functions, motion is effected, and that motion is only commensurate with nervous stimulus and muscular contractility? No one could; because we see motion exists commensurately with matter, and it pervades all that sphere to which its operations could belong or pretend: we can state this as a fact through the instrumentality of our senses; and why should we doubt that, as motion is independent of the body it acts through, as motion embraces a sphere of action equal to its properties and pretensions, so mind is independent of the body it acts through, and is to be deemed commensurate with the extent of *its* properties and pretensions; which (in the human mind distinctively) are to aspire after eternity, to possess the knowledge of moral good and moral evil, and to desire the perfection of moral good; faculties, in short, which cannot have their full end and object in this life, and must have them in a sphere suited to their full development.

Therefore, while saying what I do above, I can in the same breath heartily subscribe to Dr. Abercrombie's proposition, that the distinction between mind and the other parts of an individual's system is a *First Truth*, as much as the sense of our personal identity, on the ground that both are universally received by

* Vide Introductory Chapter.

mankind, except where their minds have become distorted, either by extravagant twists of development, or by a want of development altogether, as is the case with the idiot and those akin to him; and that to require demonstrative proof of *First Truths* (as some philosophers do, even of the possession of their own senses), is best answered by another question, such as that given to the hypothesis of the ancients, that Atlas supported the world on his shoulders, "Upon what then did Atlas himself stand?" for chaos must soon be arrived at if we allow of no First Truths.

I would say, in addition, that to view insanity to be a disease of the mental instrument, and not of abstract mind itself, is more philosophical; for is not mental health moral good, and mental derangement moral evil*, not imperfect mind? Now insanity, when complete, does not touch on the question of morals, as the sufferer is beyond its reach; for the question of morals is dependent on the question of responsibility; and the question of responsibility is dependent on the possession of power over the will, which, in the insane, in proportion to the oppression of their disease, is more or less wholly gone, and for the time a dead letter. And this view of the position of the will in disease, confirms the argument (which many persons have chiefly in view when they seek to avoid the doctrine of the corporeal nature of insanity,) that ordinary physical infirmity is no excuse for moral defects; for be it observed, that it is disease which is beyond our control, and this alone, (not any perversion of will which we can control,) which can take from us the advantages and disadvantages of moral responsibility; such a disease, I repeat, I believe to exist more or less in insanity. Indeed, I may say with safety, that if there is one mental quality more than another, the suspension of whose operations is indicative and decisive of insanity, it is that of *moral liberty*. I propose to dwell at some length upon this hereafter; I therefore will not say much here. As regards most of the lower,

* Vide Introductory Chapter.

but more elementary qualities of mind, they exist very often to an intenser degree in the insane than they do in the sane,—indeed this is a great characteristic of insanity; for example, the most elementary of all the phenomena of mind, namely, the consciousness of the conception of images by the mind, is morbidly active, either in the way of rapidity of succession of ideas, or indelible impression of *single* ideas. Again, the instinctive impulses, which are the highest qualities of mind in many of the lower tribes of animals, are very often so excessive in insanity, as to become in some cases the most remarkable characteristics of the disease. Even the higher intellectual faculties, *though for the most part more or less suspended by insanity,* are in some remarkable cases morbidly excessive,—as witness the well-known cases of what appears to be supernatural retention of memory, exhibited by some insane people, and the extraordinary increase of accomplishments, which also is manifested in some rare cases during paroxysms (vide Abercrombie's Intellectual Powers, page 267, &c.): these cases are, however, as rare as it is to have greater intellectual power in dreams than when awake,—a peculiar subversion of ordinary rules which does sometimes occur. (Ibid. p. 232). But the faculty of *moral liberty,* which is able to commence trains of thought, to direct them according to its own dicta, and to stop them when it pleases, which can select according to the influence of great original principles, *even to the exclusion of the more pressing objects of present consciousness,* the faculty which so peculiarly marks out man as having his destiny above and distinct from all created nature besides, is that which is peculiarly suspended by the influences which cause insanity. And the fact that this highest, most refined, and most ethereal quality of the mind, is the most prone to suspend its operations when attacked by that which destroys the harmony and union of the various agents which constitute perfect mind, only corroborates the great truth which we find to pervade both moral and physical nature (as things are at present constituted), namely, that in such a jar

of elements those which are the most refined succumb the first.

I will only add, that in these observations I by no means wish to detract from the position of the body in the economy of nature, for I know that its destiny is commensurate with that of its spiritual inhabitant, when its elements shall have assumed the position of incorruption, and body and mind shall be together incorporated into that "celestial body which shall be," but of whose image we know nothing more than the idea conveyed by the words of inspiration—"There is a natural body and there is a spiritual body."

Upon the pathology of Insanity.—I now beg to draw attention to a pathology which has much interested me of late. *I allude to the various states of morbid irritability and paralysis of nervous energy which arise from a loss of tone and healthy action in the nervous system.** Before I proceed, I

* As this pathology depends on a few physiological considerations of great importance, I will state some of them here:—

It is needless to say that there is a right and a wrong mode of nervous action; the right mode depends very much on a certain static condition of the nervous system, which enables it to remain in repose until it is called forth into action by its own proper stimuli; the wrong mode is that wherein abnormal stimuli set in action and produce the same effects that proper stimuli should. It is difficult to apply this theory, with any accuracy of detail, to nervous agency employed in abstract mental manifestations, as we know so little of their mode of action, and probably ever shall know little of them; but let us apply it to special sensations. The mode of action, in health, of the sense of sight is, that no consciousness of vision is excited until proper external stimuli, which we call objects, have irritated this nervous quiescence into action; but there is an abnormal mode of producing the same effect, which we may call subjective irritation: thus, internal agencies will cause flashes of light to be seen which have no such existence in the external world. But a more remarkable instance is in the case of dreams and visions, where no external objects are presented, and yet things are really *seen;* as any one knows, if he remembers the distinctness of objects on his consciousness when he awakes from a vivid dream; indeed, this consciousness of seeing has been so

beg to state that my interest in the laws of nervous irritability has been called forth not only in the investigation of the causes of insanity, but also in that of a peculiar spasmodic affection, namely, stammering. I will take this opportunity to confess an authorship which I was deterred from doing at the time from some personal motives, which have now in a great degree been removed. I refer to a treatise which I published some months ago, entitled, "Stammering and its Treatment; by Bacc. Med. Oxon:" wherein I show my belief that stammering is a chronic chorea of the speech-muscles, arising from a morbid irritability of nervous fibre, (generally hereditary, or at least congenital) and resulting in a loss of equilibrium between the mental and motor nervous forces, in which (whether stammering assume the more mental or more physical type) in every case the physical motor power is unequal to the pressure of the mental force, and

intense in some people that after a vivid dream, and when they are quite awake, they cannot dissipate the vision from their retina, but see it reflected there for some time: these cases are peculiar, because the optic nerve generally loses its impressions immediately after they are made, and does not retain the sense, as some of the nerves of special sense do, after the stimulating object is gone, as for example, the gustatory nerve; but still they are genuine, though probably caused by some abnormal physical action. It may seem unintelligible that I should call the dreaming state one of abnormal action, as it is induced coincidentally with perfect health; it is so, I grant, in a general sense, but still I do not look on the dreaming state as one of such tonic health, as either the waking state or the state of profound sleep: both of these are states which are necessary for the health and well-being of all organized beings, whether plants or animals, and therefore form a part of healthy action; but the dreaming state is one intermediate between these states—it is the condition of transition, which animals are subject to, between the two perfect conditions of organic life, and is itself an imperfect state. But more of this hereafter; I will only say that I call it a state of abnormal irritability.

Now, one of the most ordinary proximate causes of these subjective phenomena is pressure, or absence of proper pressure, on the nervous system: thus, congestions of blood can, and probably often do, occasion this state: again, absence of arterial blood in sufficient quantities may cause it; and this shows it may arise from want of sufficient stimulation and nourishment, &c. &c., as well as mechanical pressure. I will only add, as a means to understand properly the action of the sense of

is driven consequently into spasmodic action when pressed upon by the will.

In the divisions I am about to make of the seats of the various mental faculties, I hope that I may escape the charges brought against phrenological distinctions generally; for, be it observed, that though I recognise (as I believe the best physiologists* of the present day will agree with me in doing) the probable distinctiveness of locality for the operation of broadly distinct faculties, I by no means attempt to localize their sphere of action, and I thus elude what are, to my mind, invincible arguments against the details of phrenology, if the grey matter of the brain is allowed to be the only true sensorium, and if comparative anatomy, the experience of disease, and the results of experiments on animals, are allowed to have their due weight.†

The theory of the pathology of insanity which I wish to put forward in this treatise is as follows:—

1. That it is an affection consequent on depressed vitality, which depression of vitality is wont to manifest itself with peculiar and specific force in the cerebral masses, owing to a congenital, and frequently hereditary, tendency in the brain thus to succumb when oppressed by any exciting cause.

2. That when the cerebral masses are suffering from this condition of depressed vitality, they lose that static equilibrium of the nervous energies which we call tone (and which is peculiarly indicative of healthy vigour), and they exhibit in their functions the two different degrees of deficient nervous action

sight, that it is very necessary to remember these two rules:—1. it is not the eye which sees, but the sensorium, for no nerve is sensibly impressed at the periphery, the only change that takes place there being a peculiar impression, such as the nature of the nerve enables it to receive; 2. the sensorium does not perceive the object, but the reflection of the object.

* Vide Carpenter's Human Physiology,—Tabular View of the Nervous Centres,—p. 229.

† For explanation of this sentence vide Introductory Chapter.

(coincidently), namely, irritable excess of action, and partial paralysis; that, in consequence, the brain becomes an imperfect instrument for the manifestation of mind; and that (as the manifestations of the spiritual being are subject to the infirmities of its instrument,) its operations are distorted either into irritable and diseased excess, or more or less suspended altogether.

3. That these two degrees of deficient nervous energy do not fall alike upon all the seats of mental operations,* but that the seats of the more elementary faculties (such as the conception of ideas, &c.) maintain generally only the first condition, namely, that of irritable excess, which is exhibited either by excessive rapidity of succession of ideas, or undue impression of single ideas; while the seats of the less elementary but higher faculties, such as reason and will, &c., generally succumb to this second degree, namely, partial suspension of action.† And let me say that I shall discuss hereafter the question whether this temporary and partial paralysis results, *directly* and entirely, from excessive depression of the nervous centres of those higher faculties—(such a depressed condition of nervous vigour as we believe to

* Vide Introductory Chapter.

† That irritable modes of action, and paralysis, or suspension of all action, are two successive degrees of deficient nervous function, physiologists well know. This may be proved by different degrees of mechanical pressure on nerves; but it is also to be proved from different degrees of want of stimulus and deficiency of tone. To give a familiar instance of the latter to the general reader, I will allude to the condition of tinnitus aurium (singing in the ears), and deafness. Singing in the ears is the result of irritable excess of action in the auditory nerve; deafness is occasioned by suspension of nervous action. Vigour of nervous action is shown by what we may call the static quiescence of health; vigour is shown in the auditory nerve when it vibrates only in accordance with the vibrations of the external world: when the nerve loses tone, it vibrates of its own accord, the equilibrium of the vis nervosa is disturbed: thus persons fainting suffer from this affection; whereas when the nerve loses all power, persons become deaf. As another instance of these two degrees of loss of power consequent on the exhaustion of long use, take what happens to the retina if we gaze long at anything: first, muscæ volitantes occur,—various colours are seen, showing irritable action; and finally darkness succeeds, and black spots arise, and continue until the nerve has recovered its power. And (leaving the special senses,

be the source of some forms of paralysis of motion which evidently arise from direct depression of the nervous centres of motion)—or partly, and in an *indirect* manner, from nervous energy being abstracted to other parts which are in more violent exercise at the time (such a condition of nervous energy as we suppose to exist in the earlier stages of passion, where, certain functions are suspended owing to the intenser operation of others;—witness the sensorial conditions of sight and sound, and even of common sensation.)

4. Corroborative of the preceding suggestions, it is to be observed that, coincidently with this want of tone, manifested in the seat of the sensorial faculties, there exists very frequently in the insane a marked want of vitality and nervous tone in those parts of the system which are connected with physical life, such as the superficies of the skin, mucous linings and appendages; and that, while morbid excess of energy is active in the sphere of action of conception of ideas, these parts seem more or less to suspend their operations; so that, to speak somewhat loosely, it would seem that, owing to this general loss of tone, all energy which remains was continually accumulating to that part which is already in morbid excess, leaving the parts which are already minus more and more devoid of energy. Such, at least, is the idea conveyed to any practical observer of this state of things; and this, I may also add, is a great index of treatment to the practical man.

and returning to mental manifestations) when alcohol or any other poison to the blood acts upon the nervous system, through the circulation or otherwise, causing the static equilibrium to be disturbed, the first effects are morbid excitement and irritable action, as manifested by the physical and mental phenomena of persons half tipsy: when this depressing action on the nervous system is increased, torpor succeeds. An instance, also, of one part of the nervous system being in the state of morbid excess, coincident with another in a state of suspension of all action, is shown in the case of paralysis combined with convulsions; and what occurs here in the case of the spinal nervous system, or the system connected with motion, we may believe to happen to the cerebral system, or the part employed as the instrument of mental manifestations.

5. And lastly, we find the two principal pathological hypotheses mentioned above (namely, a depression of vitality, and a consequent *morbid accumulation* and suspension of nervous energy) are supported by the results of that treatment which is employed on the supposition of these two morbid conditions; for that which will at the same time raise depressed vitality, and equalize disturbed nervous energy, is found to be most useful in the treatment of insanity,—and this is exercise in the open air, as well as the due employment of other vital stimuli. Such a mode of remedy is, indeed, nothing more, in reality, than following the track which nature suggests when individuals are reasonable enough to obey its dictates. We all know the value of physical exercise in the open air after great mental exertions and accumulation of ideas. This knowledge urges the schoolboy to his athletic games, the University student to his "constitutional walk," the statesman to his rural pursuits; and they all know, though they cannot explain the physiological cause, that the exercise of one nervous function will afford surer rest and refreshment after the oppression of another, than any vain attempt to lull all nervous energies to a repose which is generally unattainable while nervous excitement lasts. And if the sane mind is thus relieved, when ideas have been flashing fast, owing to a voluntary direction of the attention, why should there not be the same result when ideas accumulate and hurry after one another through the mind, from an inability to restrain and direct them, the ordinary check having been more or less removed, namely, the power over the will to guide and control them?

Such are the principal points in connection with the pathology of insanity which I wish to discuss on the present occasion; and I shall now endeavour to substantiate them by considering them under three heads.

First: I would deduce the probability that insanity is caused by loss of nervous tone, and loss of nervous tone by depressed vitality, from the analogy of the symptoms of insanity to those

of other mental conditions which we must acknowledge to arise from deficiency of nervous power, and more especially to those where the loss of nervous power is consequent ultimately on depressed vitality.

Secondly: I would substantiate these points by the consideration of the general state of the physical condition in the insane.

Thirdly: I would strengthen the doctrine of depressed vitality, as well as that of the consequent accumulation and deficiency of nervous energy, by laying before my reader a short account of the benefit of treatment directed on these hypotheses; which account I propose to illustrate by cases which have been under my care within these last few months.

These three subjects I propose to discuss in three separate chapters; but, before I do so, I would make one or two general remarks.

1st, I would observe, that, in searching for the ultimate causes of insanity, it does not advance the subject much to bring forward such mechanical causes as create irritation, pressure, and atrophy of the sensorial substance; as, though these are, no doubt, continually exciting causes of active insanity, yet they cannot be looked upon as ultimate causes, for these two plain and simple reasons:—1. That many insane people do not suffer from such causes in the early stages of the disease, at least as far as our present means of investigation can prove the point. 2. That these sources of disease do exist in many people, without much impairment of the intellect, particularly where they are produced slowly. The theory also, that insanity is the production of certain sympathetic causes, such as abdominal, uterine, &c., is to be met very much with the same arguments, though I am fully aware that abdominal ailments are so general in incipient insanity as to cause no mean authority to esteem them to be a universal source of the disease. I propose to show, hereafter, the position I believe congestions and determinations of blood to the head to hold in acute insanity, stating only that I cannot but look on them as origi-

nated by antecedent nervous irritability; though, when once manifested, they become active sources of keeping up and increasing nervous irritability.

2ndly. While dwelling on the theory of nervous accumulation indicated in the pathology given above, I beg to say that I agree very much with those who think that the violent efforts of thought and act manifested by the insane, are nothing more nor less than attempts on the part of nature to throw off, and free itself from, this morbid excess of nervous energy. Moreover, that the violence of these acts, if within certain bounds, is not to be looked upon wholly with fear, but rather with hope, believing, as is generally acknowledged to be the case, that the more acute the symptoms are, the more prospect there is of cure, provided no radical injury to the organ suffering has been occasioned. I would venture to add, that the only results of the treatment of those practitioners who strap down their patients to their beds, which are not injurious, but rather conservatory, are those which they dread the most,—namely, the violent resistance by voice and movement which the patient is driven to by such treatment: the struggles against coercive means sometimes causing an exhaustion, which is necessary before sleep or rest can be obtained, but which ought to have been obtained by the healthy means of physical freedom, and exercise in grounds suited to their necessities.

I am inclined, moreover, to agree very much with those who think that spasmodic affections are similar instances of the endeavour, on the part of nature, to free herself from an accumulation of nervous force, or an increased excitability, acting on those nervous centres of motion with which the distorted muscles are connected (vide "Essay on Stammering"); and if so, the same original want of tone which causes irritable action in the sensorium in insanity, might very well spread to the ganglia of the spine—the centres of spasmodic action—and cause a similar state of nervous accumulation there. And this view of the case would account very much for the marked

tendency which spasmodic affections have to associate themselves with insanity, and strengthen the belief that insanity is a disease of a kindred nature with spasmodic affections. But this view of the case has apparently led some gentlemen to think that some of the acts of insanity are themselves spasmodic. Now I would say on this head, very emphatically, that I cannot but believe, that if these spasmodic actions (where they really exist) were to be traced to their right source, they would be found to arise not from disease of the true sensorial centres immediately, but from the complication of the centres of motion in the same affection. And it is very necessary to distinguish clearly between the centres of thought and of motion, when we apply the ganglionic theory to disease;* for to esteem it possible that pure insanity results in spasmodic acts, is to make insanity a disease of motion, and not one of thought. Now we cannot believe that the motions of uncomplicated insanity, however violent, are in any way the result of a deranged reflex power, since they are evidently the result of a deranged power of intelligence and volition: but the word spasm necessarily involves an automatic act essentially independent of the consciousness. Tetanus, epilepsy, chorea, &c. &c. are, I grant, secondarily influenced by the mind; but they are essentially independent of it, as we may judge from their continuance unabated during coma, &c. Of course we must grant that certain motions are actuated by the will; but in this case motion is a second stage of the act, or rather, I would say, a

* It certainly would assist pathological observation very much if the terms of physiology were more accurate, for, in applying the ganglionic theory to disease, it complicates the matter unnecessarily to call the afferent nerves *sensitive*, and the efferent *motor*. Now, in fact, the afferent nerves are only conductors of impressions; and, though some of them leading to the centres of consciousness are the means of rendering the impressions with which they are connected *sensible*, others, which tend only to the ganglia of motion, are of course independent of consciousness. Again, the efferent nerves are not themselves endowed with the property of motion, but only convey, as conductors from the ganglionic centres, that impulse which is necessary to put muscular contractility into action.

second act; for we cannot but grant that the resulting and ultimate act of the nervous centres, allotted to be the instrument of the mind, is thought, and not motion, and that the centre of motion receives its impulse from the centre of thought. It is sufficient to grant that the mind acts by means of a nervous centre, and that, as the Creator has willed it, any impairment of the perfection of this centre impairs the manifestations of the mind; but I think that a distinct idea of the sphere of its action assists to keep before our mind its essential distinctness from all mere bodily functions.

And while dwelling upon these topics, let me say that it is very interesting to observe what Dr. Bush, of Cheltenham, has noted with much clearness,—that the irritability of nervous energy is wont to cause its excesses to appear upon those organs which, *at the time of excitement of disease, are the most developing, and undergoing the most work.* Thus in childhood it falls on the spinal system of motion, and results in convulsions of various sorts; while in manhood it falls on the system connected with mind, and insanity is the result,—a complaint very seldom known to exist under the ages of seven or eight. In connection with this reflection, it is interesting also to observe how savages are free from insanity (vide Dr. Rush's and Baron Humboldt's remarks on the native Indians of America); for it shows us pretty clearly that this complaint is the consequence of excessive culture of the intellect. Again, we find the inferior animals subject to spasmodic affections, but not, I imagine, to that derangement of the mental phenomena which we call insanity; they may suffer from temporary delirium in fever, or from the paralyzing effects of old age, but these are essentially distinct conditions from insanity.

CHAPTER II.

THE PATHOLOGY SUPPORTED BY THE ANALOGY AND HISTORY OF OTHER MENTAL CONDITIONS.

Introductory remarks—Summary of last chapter—The pathology supported by the analogy to insanity of other mental conditions—Mental phenomena of the insane—The mental phenomena, and the causes of these phenomena, in dreaming, somnambulism, abstraction of mind. Passion—Infancy—Old age—Intoxication—Fever—Internal sources of delirium—Nervous pressure, &c.—Probability to be deduced from the above consideration that insanity is—1, an affection arising simply from nervous deficiency; 2, That this deficiency arises from loss of vitality.

It is usual, in treating of the causes of diseases, to employ the terms ultimate, proximate, and exciting causes; and these terms are peculiarly useful in studying insanity. My experience leads me to believe the ultimate cause of insanity is a *congenital* (and frequently hereditary) *predisposition* to succumb to a state of nervous irritability and paralysis in the cerebral organs; and to consider this state, when arrived at, as the proximate cause of insane phenomena.

It is not my purpose to dilate at any length on exciting causes; and I would only observe, that I call those exciting causes which (whether of a physical or moral nature) compel the dormant ultimate cause into that active condition of disease called the proximate cause.

The subject-matter of the ultimate cause, also, I would dismiss in a few words, as, until it manifests itself by assuming the position of active disease, it is a condition to be guessed at, rather than commented upon. We may call it an irritable diathesis, or by any other term that we please; but all we mean

is, that we judge some persons, by known hereditary taint, by peculiarities in their sensations and actions, by proneness to nervous disease either in themselves or in other members of their immediate family, to be subjects which have most probably the seeds of insanity in them; though, should no sufficiently exciting cause stimulate this condition into an active state, they would probably live to the ordinary periods of life without exhibiting any insane symptoms. The necessity for believing in some such diathesis as this, arises from the circumstance, that exciting causes alone will not account for insanity; for persons not prone to insanity, whose nervous systems can resist that which overwhelms others, will suffer every imaginable lesion of a physical sort—carcinoma, tubercle, exostosis, wounds, concussions, general atrophy, &c., and every sort of moral shock,—such as grief or joy, terror or rapture, without succumbing to the disease; while a very small amount of such trials will occasion this peculiar and marked affection in certain persons who seem to be predisposed. With these remarks on antecedent causes, I propose to continue the consideration of the proximate cause of this disease.

I stated in the former chapter, my opinion—that without seeking for any more subtle or metaphysical cause for insanity, we may believe insane phenomena to arise from those states of *irritability and deficiency* of action in the sensorium which are the consequences of loss of nervous tone;—that these two degrees, of morbid excess, and suspension of function, fall coincidently upon different parts of the sensorium; that the first condition affects particularly the seat of the more elementary phenomena of mind, and that the latter condition, of suspension or partial paralysis of cerebral power, affects particularly the seats of the higher faculties.

I propose now to treat of this matter more in detail. There are two interesting questions which arise out of what I have just stated.

1. Is there anything in the mental phenomena of the insane which could not be accounted for on such results of loss of nervous tone as those just given?

2. Suppose it granted that the phenomena of insanity are to be accounted as dependent solely and simply upon loss of nervous tone, what is the probable source of this nervous deficiency?

Both of these questions will, I believe, be best considered, —first, by comparing the phenomena of insanity with those of other mental conditions very similar to insanity, but which conditions *we know* to result from deficiency of nervous power, and some of them ultimately from vital deficiency; secondly, by considering the general physical history of the insane. These two matters I propose now to discuss in two separate chapters.

For the fair discussion of the first proposition I will divide the matter into the three following heads :—

1. I propose to state some of the most common mental phenomena of the insane.

2. To state some of those mental conditions which are very similar to insanity, with the acknowledged causes of those conditions, as well as the mode of access of those causes.

3. From the two preceding considerations, to show the probability, that insanity is simply a disease of nervous depression, consequent on loss of vitality.

SECTION I.

I will now enter upon the first division of the subject, and describe some of the most common phenomena of insanity.

General definition of the mental condition of the Insane.— Insanity, speaking generally, may be said to be a condition of the mind where it is capable of the functions of simple suggestion to a most intense degree, but where it is more or less incapable of the function of relative suggestion. I will put this in other

words: the mind, or rather its instrument, is capable of the conception and impression of ideas, but it is more or less incapable of comparing facts with facts, and mental impressions with external things. The consequence is, that vague impressions of the mind are believed often to have a present reality of existence in the natural world, reason or relative suggestion not having the power to correct these ideas by the actual relation of external things; and one fact is thought to depend upon another fact, with which, in truth, it has no connexion. But, as I have stated already, the most conspicuous phenomenon is, that the chain of ideas or images, which arise, follow, and interrupt one another, do so, *not subservient to the dictates of the will*, as in health in the waking state, but according to certain associations over which the will has no control, and which are most probably dictated, either by those impressions which are most strong on the memory, or by various bodily impressions (such as those upon the skin and primæ viæ), which are mistaken for real external agents. Of course, in saying this, I am speaking principally of acute active insanity; and it must be understood that this condition is generally comparative, and not absolute. A person thus helpless as regards moral liberty is proportionally dependent on present impressions for happiness or suffering, all mitigating influences being very much removed; for experience and judgment neither take from his pleasurable sensations by telling him they are transitory, nor from painful by similar arguments: and as there is much more of painful than pleasurable sensation arising from the derangement of the bodily organs, the majority of cases, though not all, suffer pain rather than pleasure. The person thus suffering seems to live in a kind of a waking dream or trance, and it signifies little whether his eyes are closed or open, for the same objects seem equally to rivet his attention.

This, however, is a highly-wrought picture, and such as proves by no means the ordinary condition of the insane: as I said above, it is chiefly to be found in the acute stages

of the disease. It is, as it were, the limit of what we term mania, and it is therefore useful to describe it as a standard by which to judge of all those varieties of the disease, which, in intellectual insanity, are but modifications of this extreme case. But if I only gave this description of insanity, I am well aware that I might incur the charge of not sketching from nature. I will, therefore, give a few of the modifications of this condition which have struck me most in practice.

I. *Modification.*—The first case of partial mania to which I will allude is the form generally seen in the incipient stages, but which, in some cases, exists pretty nearly throughout the disease: in this form, the chief, if not the only faculty, which is suspended, is the *moral liberty* to control and direct the chain of ideas: the faculties of judgment and reason seem to retain their force: a knowledge of the relation which facts bear to facts, and mental impressions bear to external things, is not lost; the patient argues well, he perceives a coherence even when his auditor does not, the excessive rapidity of his ideas often not allowing the auditor time to collect them; so that, in a certain sense, the incoherence is more on the part of him who sits in judgment than of the patient. And not only does he feel a consciousness of the possession of reasoning power, but he suffers under a dread of losing this power; he fears lest the intensity and violent rapidity of his conception of ideas should entirely overwhelm his reasoning powers, or rather, lest his reasoning powers should not keep pace with the conception of ideas. This patient's mental phenomena are beginning to assume the terrible condition of a waking dream, and he is conscious of it; he knows that he is losing the power of control over the succession of his thoughts, and he feels that he shall soon lose the proper appreciation of those thoughts themselves. This is a much more painful case to witness than fully developed insanity, for here there is a terrible struggle and a panic-dread on the sufferer's part lest he should be mastered. This condition has struck me very much in practice, and has not, I

believe, received that degree of attention which it deserves. To use a rough analogy, it is somewhat like the condition of a bad rider on a runaway horse: the sense of the loss of control over the animal is felt and dreaded; the rider sees he cannot stop it at will; he feels he shall soon not be able to guide it at all; he uses his best energies with tremulous anxiety on the bridle, but the bridle becomes less and less attended to, while the spur of the ill-seated rider is involuntarily goading the sides of the furious animal. While we apply this simile to the case of fully developed mania, and show wherein it differs from the case last given, we must suppose the rider to be as blind and furious as the horse, and both to rush on to destruction, without any fear or even knowledge of what is occurring.

II. A second class of partial intellectual insanity consists of those who suffer from a restless anxiety to understand the meaning of things around them, and of their own thoughts, though they exhibit no uncontrollable rapidity of the succession of ideas. This is an equally distressing state of mind to witness, if not more so, than the former. These persons continually ask you who they are, what they are about, how they came to be where they are? they mistake conscious impressions for realities,—as, for instance, they think internal bodily ailments to be worms, snakes, &c., crawling about within them; though sometimes they will laugh at their own absurdities: they clasp their hands, they beseech you to let them go somewhere, though they know not where.* When you open a door to let them go

* One lady affected in this way said to me the other day, after a continued struggle of this sort, "Oh! I wish I were in heaven;" and seldom have I responded more fervently, "I wish you were." This poor creature is apparently in a continual agony of mind: she longs to understand things, and seems conscious at times of being mad: if she sees any smoke in the house, she thinks that it is on fire; if she feels any internal sensation, she thinks it some animal crawling within her; she constantly holds me tight for no purpose, and tries to get doors open, and when they are open has no purpose to carry out. She is the third member of her family who is in confinement at this present time, and has become,

where they like, they will not move, and know not what to do: in short, they feel deep anxiety and torturing irritation of mind, and yet they know not what it is all about: fancy stimulates, reason does not respond, and though the will to alter and allay their thoughts is striven after, it is not fully grasped or effectually obtained. This condition resembles a person in a nightmare, who strives to open his eyes, who knows it is all a dream, and yet is so spell-bound that he cannot release himself from it.

III. There is a third form of partial mania (which is very frequent), where the patient seems conscious of his disease, for he is able to restrain it when he chooses to make the effort: thus, for instance, a man will go on talking the greatest nonsense to himself all day; if you listen to him, you will find he is talking of, and sometimes at, different imaginary subjects in the most absurd and incoherent manner; if you go up to him, and ask him a question, should he conceive it of sufficient importance to behave rightly, he will stop his nonsense, and answer well and properly; sometimes he will appear ashamed of his conduct having been observed, and try to pass it off in some excusable manner. In these cases it would seem that the difficulty is, not that he cannot at all times appreciate reason, or at times exert moral control, but that he finds it impossible constantly to place these checks over his morbid imagination. Some patients are very sly in this way, and, though you may see them continually giving way to the most absurd expressions and actions, yet, when they are aware that some one is wishing to test their condition, they can restrain and hide it all. This description of phenomena, however, generally belongs to the chronic active insane class.*

I fear, a permanent case: she is a remarkable instance of depression of the vital and nervous energies in the organs of physical life; the primæ viæ being remarkably torpid, and her skin evincing much want of healthy vigour of action, being bloated and inclined to break out into petechial spots.

* The metaphysical condition of this class is commented on in the Introductory Chapter.

IV. Another form of partial madness is evinced by those who suffer from a general and extreme prostration of all nervous and physical power: in this instance, the patient does not manifest any delusion until his lowness becomes excessive and more than ordinary, and then his extreme depression runs into terror and anxieties which have no real source; every effort is performed with morbid dread, even the least movement seems sufficient to raise anxious fears; sounds are listened to with anxiety, objects of sight cause an extremely morbid interest: this is a state, in short, of distressing sensibility, which only occasionally runs into real aberration of mind. To this class the term melancholia would peculiarly apply; it is wont to fix only on one or two objects of anxiety, and might in this particular resemble monomania (a class I shall immediately speak of) rather than general madness, were it not that the delusions do not consist of those settled and fixed convictions on one or more points which characterise that affection, but in a most morbid general sensitiveness, which fixes on that subject which the sufferings of the patient at the moment call up. These cases of extreme depression sometimes alternate with periods of great excitement and exaltation of mind; all power of balancing the feelings seems to be lost, and in this state of want of rule any extreme is preferred to the happy medium of health. The extravagant contrast existing between the propensities and desires of the same person in these two different states is sometimes very remarkable: when low, they dread every change and every undertaking; they are very parsimonious even in things necessary for them; when in the excited condition, no undertaking seems too great for them,—they are extravagant in expenditure, and not less so in all that they do.

V. Some modifications of insanity seem nothing more than exaggerated varieties of hysteria both in the symptoms and the periods at which they occur; other paroxysms of madness are only

an extreme degree of that imbecility, which exists more or less at all times, which is generally harmless, but which at times, and after the operation of certain exciting causes (such as drinking and debauchery), causes such a degree of helpless weakness and extravagance as to call for interference and restraint. The chief symptoms of some appear to consist of obtuseness of sensibility; they seem lost in reverie, and require to be spoken to very loudly before their attention can be gained; when their attention is gained, they have much more power of arranging and correcting their thoughts than we should have imagined possible in their case. Others, again, seem only subject to causeless fits of anger and meaningless obstinacy, to most profane and licentious conversation, and a loss of all shame: these cases, however, rather belong to moral than intellectual insanity; and it may be said that it is chiefly on account of the great disproportion between the cause for such emotion and the emotion exhibited, added to the alteration from all previous habits in the individual, that we are obliged to deem them the victims of disease. Of the greater number, however, of these slighter cases, it may be said that the symptoms are much more under the control of the patients than they or their friends generally imagine, and that it is chiefly owing to want of mental fortitude that they do not adopt this control. This fact has, indeed, so forcibly struck some observers, as to make them imagine that the phenomena of madness generally are subject to the control of those who manifest them, if they would only choose to exert what powers they possess: this is, however, I need hardly say, not the case.

I feel that I might go on almost *ad infinitum* in classifying the forms of partial mania; for, as we say of the sane, *quot homines tot sententiæ*, so, if we wish to be very accurate in classifying the variations of deranged mind, we must say of the insane. Madness, indeed, assumes every form of mental derangement that we see exhibited in other conditions which are

of a temporary nature, and which are looked upon as only the variations (to be expected under certain circumstances) of sane minds; such as dreaming, drunkenness, reverie, childishness, imbecility, terror, enthusiasm, anger, despair, &c. &c.; the chief differences, indeed, between insanity and these conditions, consisting in the durability of the attack, and the fact that the history of causes is more manifest to the ordinary observer in the latter than in the former condition.

VI. But before I conclude I must not omit to allude to that class of partial insanity which is generally called monomania: here, the intensity of one impression, rather than the excessive rapidity, violence, or indistinctness of many, is the consequence of disease. In these cases neither the controlling agency of the will or the reason is suspended on most subjects, though it is so on certain points; these people can guide their thoughts well enough on most questions, can see the full relations that cause bears to effect, and that mental impressions bear to external things, but they cannot properly control those impressions which are most strongly fixed on the mind:* this state has very

* It is difficult to imagine, in many of these cases, that the sensorium suffers from any greater loss of tone than that which results in irritable excess; for in these cases no distinct faculty of the mind would seem to be absolutely suspended, but only a faculty when needed for exercise on certain subjects of a distinct character: the fault would therefore, in these cases, seem to depend on a comparative loss of power, or rather the higher faculties would seem unequal to contend with the positively excessive influence of certain simple suggestions. Indeed, when I speak of these two degrees of loss of nervous power as accounting for the excesses and deficiencies visible in the mental phenomena of the insane, I must beg it to be understood, that I do not mean to say that both degrees must always exist in an equally positive manner; for I only wish to recognise these two degrees as existing states, and as necessary to be recognised in order that we may understand how it is that the varied nature of insane phenomena may be accounted for on the hypothesis of nervous debility. The variety of degrees in which imperfections of mind may depend on the absolute excess of one faculty on the one hand, or on the absolute deficiency of another faculty on the other hand, is infinite both in those we term sane as well as in the insane; and it is often difficult to say which is the most in fault: thus, should a sane person give the rein to his imagination, and

frequently a stage of contest and conscious difficulty at first, when the struggle between the morbid impressions and the faculties by which to control them is great; indeed, we may say that all morbid and excessive impressions which exclude all other considerations bear the rudimentary form of this affection, though insanity cannot be said strictly to be fully developed until the contest is decided by such a victory on the part of the morbid impressions that the moral liberty to exercise their reasoning faculties on these subjects is gone.

Persons of the irritable diathesis are peculiarly subject to degrees of this condition of mind; and considering the results which such an inclination may lead to, we must see how very important it is to resist every such tendency with every effort of our will, as long as power over that will is granted us. Moreover, we must ever remember, that that which, up to a certain point, may be beautiful and interesting, (I mean a habit of strong and overpowering emotions of the mind) may, by a little farther excess, become a frightful disease; and that though the flow of imagery may be charming to the mind inclined to such phenomena (as there is little or no effort required for its exercise in those who are thus naturally disposed), yet the real source of the charm consists in the conviction, that we can stop it at will, and relinquish its wandering guidance, when the real emergencies of our condition require it: the charm is generally all gone, both to the sufferer and the beholder, when this power is lost, and the dreamer becomes the victim and not the master of his visions. We can weep with pleasure when we contemplate

not cultivate his judgment, it is difficult to say which evil is most answerable for the pernicious result. But when we find a person with a clear and strong judgment on most subjects, and erring only on one suggestion of the mind, it is natural to think that the fault is rather in the violent excess of the latter than the absolute defectiveness of the judging power. Be it remembered, however, that I look on the loss of moral liberty (whether arrived at in an absolute or comparative manner) as a necessary condition of insanity (so far as insanity really exists), as much as I look on this loss as existent in the dreaming state.

some of the touching images raised by poor Ophelia's wanderings: this pleasure arises from a momentary sympathy with such a state of weakness and dependence; but the pleasure of the sympathy would indeed vanish, should a doubt arise as to whether our minds had that power of elasticity which enables us to rise again above such companionship; and, were our minds compelled to wander with Ophelia's all our lives, we should sigh indeed (had we the power of regret left to us) for that state of vigour of mind necessary for any enjoyment of the things of life. Those who wish to be convinced of these things need only witness madness in reality, and compare it with madness in poetry; or rather, I would say, witness the feelings which one mad person entertains towards another, and compare it with the feelings that a sane person can afford to have towards one afflicted in this way.

VII. As regards active chronic insanity, it may be said generally that it is a stage of varying degree between the acute and imbecile states; it manifests, more or less, some of the varieties of form just now alluded to; and, if I may be allowed the use of metaphor, I would say, that among the chief distinctions between it and acute insanity, is the circumstance, that, as the channel of abnormal thoughts becomes deeper, the force of its current becomes less violent; and that as the probability that thought may be turned into its right channel becomes more hopeless, there is manifestly a mitigation of acuteness of suffering. Active chronic insanity is the condition of a great portion of the inmates of a lunatic asylum; it is the state which, I believe, perplexes a novice the most, as he knows not how to classify it; for its symptoms dovetail so much with those of the stages above and below it, that an ordinary observer is, at one time, inclined to raise it to the condition of acute mania, and at others to lower it to the state of hopeless imbecility. One of the most interesting phenomena of chronic insanity is the fact of the intermission of the disease, or what are termed lucid intervals; for in these cases we must imagine that whatever the

morbid nervous condition may be which causes this disease, it is liable to suspend its baneful influence for a time, and give place to the happy condition of comparative health. Symptoms of general physical disorder become much less exaggerated as the affection assumes a chronic form,—except, indeed, where the structural disease of some important organ is in operation; and it is not mere metaphor to say that the bodily frame appears to acquiesce in allowing such a degree of ailment as that upon which the mental aberration depends, to continue, without yielding up further its physical health and vigour; so that people suffering from this condition often live to a great age. But of this more hereafter.

VIII. Of the stage of imbecility it may be said generally that, when genuine, it is a state of mental palsy and decay: it is the premature extinction of the lamp of life,—it is a condition to which all whose physical existence outlives their cerebral vigour are subject. It would seem in these cases that the exciting period of active madness had effected in a short time what the ordinary wear and tear of an extended life naturally ensures. It is, however, different in some respects to senile imbecility; and one of the most conspicuous of these differences consists in the manifestation of this mental decay in conjunction with an active and often powerful bodily frame: the aspect of the imbecile lunatic has therefore an appearance of want of harmony which extreme old age does not exhibit, and which is often peculiarly painful to witness. The imbecility, moreover, of lunacy is seldom so harmless and simple a condition as that of the extreme of life, as it is often mixed up with occasional outbreaks of a more active and violent condition of mind, such as the sense of the possession of muscular force may in a great measure account for. It is, however, by no means necessary that a person should have gone through a stage of very active mania, to arrive at the imbecile stage of insanity: some lunatics gradually sink into this condition without exhibiting at any time any great violence or excitement of

mind: from a condition of healthy vigour they gradually sink into a childish and fatuous state. Some, again, are born with a naturally imbecile and deficient organism: these, however, approach that condition which, while it is like insanity in many respects, may be said, in many others, to be at the opposite end of the scale of mental pathology—namely, congenital idiotcy.

Instinctive madness.—That form of the disease called instinctive madness is neither so common nor so distinctly marked as intellectual insanity: that there are such forms as these, where the intellect is clear, but the impulse to some unnatural or rather outrageous acts is violent, there can be little doubt; and that these are not the ordinary results of the evil principle residing within us, but require the supposition of morbid action in the sensorium, is equally clear: on no other supposition can we account for persons imploring others to keep out of their way, for fear they should kill or otherwise injure them; an act which they feel impelled to irresistibly, though their reason and moral sense convince them of the horror of the deed. Again, of the existence of that form called moral insanity, where the moral sense is unaccountably and suddenly changed, while the judgment remains pretty clear, there can be no doubt, though I believe that this form is much more mixed up with intellectual deficiency than is generally acknowledged at the present day: there is, however, no need to separate these classes from intellectual insanity when viewing this disease as one of nervous deficiency, for any rule which would apply to the intellectual centres will equally apply to the instinctive and emotional. I refrain, moreover, from dwelling much on these forms, from a sense that it is most difficult and replete with danger, both socially as well as religiously, to decide where actual physical disease, of such an amount as to incapacitate the mind from its proper action, steps in; for nothing can have the cover of disease except that condition which is really beyond the control of the will; and

the distance between what a person evilly disposed (as we all are by nature) imagines to be the boundary over which he can use control, and that over which he really could use control if his whole will were bent to the effort, is immense; and thus, while I feel it to be necessary to think that some are really the victims of a disease which they cannot resist, and would endeavour to shield them from punishment which otherwise they would deserve, I should fear very much to extend this shelter further than the real facts of the case would require. And, while making these observations, I would lay down this as an additional argument against yielding to evil suggestions, without employing all those means of control which an all-wise Creator has been pleased to place within our reach, when he places us in a scene of trial and probation—namely, that the voluntary rejection of good may lead to that dreadful condition of the involuntary commission of evil,—a condition which, though it may be removed from responsibility when it exists, and may sometimes be arrived at with *comparative* innocence on the part of the sufferer, is, I fear, too frequently the result of yielding while the mind held its proper place in the economy of our nature.

SECTION II.

According to the scheme laid down at the commencement of this Chapter, it will now be advisable to examine with some care the pathology of various mental phenomena which are in many points similar to those which exist in insanity; for we have a more practical and personal experience in many of them; and, inasmuch as some of them alternate with stages of complete mental vigour, we can appreciate their various manifestations, probable causes, &c. more directly than we can those of insanity; which latter we can only judge of from the sufferings of others, by witnessing their symptoms during disease, and hearing the narration of their experience after recovery.

The states of mental deficiency which I propose to discuss are similar to the phenomena of insanity, in that in all of them there is an absence or temporary suspension of certain mental phenomena, and in most of them a coincident excessive action of what we have termed the more elementary operations of the mind: and in those, which in my opinion, resemble insanity the most *in their causes*, there exists an equal or greater degree of inability to control and guide the thoughts. These mental conditions I will class according to their most apparent causes:—

First. Those conditions of the mental faculties produced by the *natural* exhaustion of the nervous and vital energies,—such as sleep and the dreaming state. Under this head I must class somnambulism and waking trance, or profound reverie; for these three states (dreaming, somnambulism, and waking trance) so frequently run into one another, that it is difficult to say where the one begins and the other ends: as, for example, talking in ordinary dreams is a species of somnambulism, in that the power over voluntary motion is partly gained in sleep; and the line between the higher conditions of somnambulism and waking trance is so difficult to determine, as to make us look on them as but different degrees of irritable sleep.

Second. Those conditions of the mental faculties produced by a voluntary effort of so concentrating nervous energies, as to make some mental phenomena become excessive, while others are suspended. This state is manifested by habits of fixed attention to one point, to the voluntary and often difficult exclusion of others, and may be called mental abstraction.

Third. Those conditions which lie, as it were, midway between the two first conditions, and are neither brought about in a wholly voluntary or wholly involuntary manner; these conditions being in some people much more subject to the will than in others, and occupying generally a position rather beside

the will than beyond it. I allude to the mental conditions of extreme passion, whether of wrath, love, enthusiasm, or any other violent and instinctive impulse.

Fourth. Those conditions produced by poisonous substances *ab externo*, which may be said generally to act on the nervous system through the circulation,—such as the states of delirium occasioned by alcohol, narcotics, various miasmata, &c.

Fifth. Those conditions of delirium produced by poisonous substances either generated and unhealthily retained in the system, or derived normally *ab externo*, but retained in excess in the body, owing to organic derangement.

Sixth. Those produced by mechanical pressure.

Seventh. Those occasioned by want of development, and by healthy decay, as in the two extremes of life, where the origin of the deficiency is evidently in the nervous structure itself.

The history of all of these cases will assist in proving the *first* point—namely, that nervous deficiency is sufficient to account for the phenomena of insanity, without requiring any more subtle or metaphysical causation; and some of them will give us interesting information on the *second* point, namely, what is the most probable source of this nervous deficiency?

Sleep and dreaming.—The mental phenomena of sleep, when profound, are not remembered, if any exist: we must therefore take those of less profound or dreaming sleep. Here the condition of the mind is very like that of *intense* insanity—namely, a very vivid impression of simple images passing before the mind,—an inability to compare these images with the things of the external world,—an inability to judge of the relation one image bears to another,—and, above all, an inability to control the train of these images by an act of will, either as regards their origin, their course, or their interruption. The most striking distinc-

tions between the phenomena of dreams and those of intense insanity are—1st. That the external world is never perhaps so entirely shut out in insanity as it is in dreams, the special senses seldom or never being so much suspended; 2dly. The power of voluntary motion is lost generally in sleep, but it exists in insanity; 3dly. The dreaming state is temporary, and able to be dispelled, while insanity is more or less permanent. There is, however, a less profound sleep even than that of the ordinary dreaming state, which generally occurs when a person is very near the waking state, though some excitable temperaments are subject to its phenomena more or less at all times. In this condition the external world is not wholly shut off from the dreamer; for he is conscious of sounds, &c., though he misinterprets them; he is able also to use his organs of motion, as is manifested in talking in sleep and throwing his limbs about: this, however, approaches the condition of somnambulism which I shall touch on by and by. In the state of very light sleep the reasoning faculties are often as intense as in the waking state, though moral liberty is not even yet achieved; and thus the succession of ideas is not directed by the will, but by other influences, such as those impressions most deeply engraven at the time on the memory, or those sensations most strong on the field of consciousness. It may be said of this condition what Locke said of insanity—they argue rightly, but on wrong premises.

Now what do we know of the conditions of the nervous system in sleep? What is the cause acting on the body which produces the mental state of profound or dreaming sleep? We know that this condition, which results in such a defective state of mental manifestation, is one consistent with health: it excites no surprise, because it is common to all: persons do not go out of the way to account for the dreaming state on subtle metaphysical grounds; they do not think a man must be possessed in any supernatural manner with an evil spirit because he dreams; and yet the only real and essential difference between

dreaming and insanity is, that all are subject more or less to the former state, and only a few to the latter. The ordinary observation would indeed be, that there is this great distinction, that the one is awake and the other asleep,; but what is the physiological meaning of this (so far as the percipient nervous system is concerned), but that the one is suffering from an ordinary, natural, and periodic physical condition of depressed nervous energy; while the other is suffering from an extraordinary, not so generally periodic, but more or less permanent, physical condition, of a similar nature, though not so intense in degree.

The source of dreaming is, indeed, mysterious, although the act is common: our special senses would help us but little in investigating it, and common sense would help us but little more without the aid of science and extensive observation; and even with these auxiliaries much must be left undetermined. If a person was rendered thus unconscious every night by some means which an ordinary observer could appreciate with his senses,—if people were thus reduced by a blow on the head or a poison introduced into the system,—men would at least say that they knew the mode of operation by which stupefaction was produced; but there is no occasion to deplore the absence of such gross and objective causation as that just mentioned; for internal subjective causes will produce the same nervous conditions that influences *ab externo* produce, and the nervous system may be as much prostrated by want of stimulus as by active means taken to reduce an existing stimulus.

The sleep of animals is that period of rest from action which pervades the organized world. All organized beings—plants as well as animals—require rest, or a period of repression of full vitality after a certain amount of action; and during this time those elementary principles, which are necessary for continuing the organic state, are renovated, and have their integrity restored. This may be called a first principle of all organic life. A good illustration of the operation of this necessity for rest after action, is exhibited in the nervous

system when we gaze long and continuously at any object; the nervous expansion of the retina becomes at length unequal to continue its function,—its present irritability is, as it were, used up, and it requires rest to obtain more: thus, black spots succeed, and soon, if the effort is much prolonged, total darkness; and the retina refuses to perform its work any longer. It may be argued, that some of the functions of animal life never rest, never seem to be exhausted,—such as the actions of the heart, and the reflex actions generally. But, though they have no periods of rest similar in length to those enjoyed by the organs adapted to the manifestation of mental phenomena, they have continual short periods of intermission from labour: as, for instance, the action of the heart is a routine of short actions and short rests; the rest is the same, though the periods are different. Again, the parts chiefly dependent on the sympathetic system of nerves,—such as the abdominal viscera, have periods of activity and periods of rest; and even those processes which are not to be esteemed dependent on nervous energy at all, but depend in a more direct manner upon their own inherent vitality,—namely, nutrition and absorption, have undoubtedly periods of alternate rest and action, as may be proved by various signs in their conformation and growth, which it would be out of place here to enter upon. We may say, then, with confidence, that sleep is a period of depressed nervous energy consequent upon a natural exhaustion which pervades the whole vital system of any organized being.

We see by the above means that nervous energy is dependent on vital energy, and we know that this dependence of the one principle on the other is effected by means of the circulation, not only viewed as the vehicle of nutrition, but as being itself that stimulus which is necessary for nervous action. As, however, it is my intention to discuss the probable influence that deteriorated blood has upon nervous action when I come to treat of the general physical symptoms of insanity, I will only say here that I believe the immediate cause of the depressed nervous condition of sleep

to arise from a deficiently vitalized blood,—or, in other words, that, through loss of vitality in the assimilating and purifying processes of the blood, carbon, and other deleterious ingredients are accumulated, and not given off, the blood becomes too venous, and not sufficiently arterial; and this, as is well known, will cause stupefaction of the nervous powers.

But while upon this subject, I would make a few remarks upon the regular periodicity of sleep, as this phenomenon must interest us the more, when we remember how frequently insane paroxysms assume periodical intermissions also. In doing so I cannot do better than repeat what Müller beautifully puts forward on this subject,—namely, "that the periods of sleeping and waking, in accordance with a pre-established harmony of nature, have been made to agree with those of the earth's revolutions: in this respect, the short periods of twenty-four hours, during which the alternation of sleeping and waking occurs, correspond to the longer periods of alternate rest and activity which animals present in the rut, in their migrations, in the changing of their feathers and their hair, and in hybernation and summer sleep." This periodicity of depressed vitality is capable of change only to a certain degree by an alteration of external circumstances: thus, a dormouse, if it is kept in a very warm place, and well supplied with food, will hybernate for a much shorter period than when left to nature and its own resources; the period of depression is shortened, but not eradicated: again, plants can be forced from their winter sleep at unnaturally early periods; and we well know that animals of the human species can turn night into day, though to the injury of their vital powers generally.

But, as I just now observed, it is particularly interesting to watch and observe the rule of this periodicity when we observe the same rule so often obtaining in insanity: thus, I have observed those symptoms, which I refer to depressed nervous energy in the insane, occurring in many cases at similar periods of the earth's revolutions,—namely, once in the monthly period,

once in the annual, and so on: for example, I have now under my charge two or three ladies who exhibit symptoms of monthly exacerbations (in one of them it cannot be referred to the catamenial period, as that has long been discontinued, and she is advanced in years), and another who suffers from paroxysms most markedly once a year. But examples of this nature are numerous.

The philosophical explanation of the causes of profound sleep would seem to have little connection with the pathology of insanity, seeing that the phenomena of the two states are so different, were it not for the phenomena of less profound sleep or the dreaming state; for as we must imagine that the cause which is in operation in the former complete state, is in operation, in a less degree, in this partial state (the phenomena of which state we have already shown to be so like those of insanity), we may say that, if profound sleep is occasioned by a depressed condition of the vital and nervous energies, less profound sleep is caused by a partially depressed condition of those agents. But a question arises at this point of our argument which is of considerable practical interest, and by no means foreign to the present subject. It has been said that vital and nervous exhaustion or depression is the physiological condition of profound sleep; it has also been said that dreaming sleep is a partial degree of profound sleep: is it, then, always a less degree of nervous exhaustion which causes this less profound sleep? By no means: it is so in some cases; as, for instance, persons begin to dream when profound sleep has already been enjoyed, and when they are about to wake—as towards morning, &c.; and *this* dreaming condition may be called a healthy one, as it is a sign that the nervous exhaustion is recovering itself: but, on the other hand, the dreaming state is often the result of an excessive exhaustion of the nervous system; as when people have been violently agitated in their minds, as in the instance of very susceptible and easily agitated temperaments, who dream generally a good deal,—as in the

instance of those who sit up late at night, and become thoroughly prostrated in their nervous system. How do we account for this incongruity? On the principle that, to be able to maintain a regular alternation of vigorous vitality and perfect rest, is itself a sign of strength, while to be continually in a state between the two is like a leaking valve (to use a rough simile), a state of weakness. This rule pervades our vital organism: thus, regular pulsation of the heart and arteries, with regular alternations of rest, manifests vigour, while a fluttering, continuous, or rather extremely rapid pulse, indicates weakness. This rule has its analogy in mechanics: thus, a machine which works well when called upon for action, and ceases to act when not called upon, is a good instrument; while one which will not work vigorously at any time, and will not rest when it is intended that it should do so, is in an infirm condition. But, to take a more general view still, we may say that it would seem that that mighty law of rhythmical order which we find pervading nature when acting according to the placid harmony of its greatest perfection, pervades the principles of vitality, that the waking and sleeping states are but like the rise and fall of the waves of the ocean, or the ebb and flow of its tides; and these intermediate conditions (which, as regards nervous energy, I have called the state of irritability), resemble intimately the destruction of this beautiful harmony of nature occasioned by the storm and tempest which sweep over its surface. Thus, we may say that though profound sleep is a condition of greater loss of vitality for the time being than unsound sleep, yet it is a sign that the nervous system has a certain static power, in being able to enjoy this condition, and maintain this equilibrium of alternate activity and repose; but that excessive use or abuse of its energies may place it in a state of so much agitation, as to cause it to get into what we call the irritable state, and thus to lose the power to sleep soundly at all. We have, therefore, two opposing influences at work, which, by their contrary operation, limit the conditions

necessary for healthy sleep,—namely, on the one side, a certain amount of nervous expenditure and exhaustion is necessary to ensure sleep; on the other, a certain amount of constitutional vigour is necessary to ensure it. Thus, the labourer sleeps soundly, while the indolent man cannot: and, on the other hand, a person who has expended that energy, which he can afford with impunity, sleeps soundly; while he who has taxed his system so as to cause it, as it were, to feed on itself, cannot obtain rest. The fact that there should be a culminating point of health, a descent from which on either side is destructive, is one, indeed, which we find to pervade our vital system; and therefore there is no inconsistency or peculiarity in the circumstance that a certain exhaustion is requisite for healthy sleep, while a greater amount prevents it. I need only allude to a few most palpable instances of a similar law: a person overfatigued loses appetite, though a certain amount of exercise is necessary to ensure appetite; a person exhausted loses animal heat, though a certain amount of labour engenders it; a certain amount of food stimulates the digestive powers, a greater amount enfeebles them; a certain amount of nervous susceptibility sharpens and strengthens the mental faculties, whereas an excess of it weakens them. But let me here remark, that this intermediate condition of wakeful dreaming is the more interesting while pursuing our inquiry into the causes of insanity, in that persons suffering from mania are very frequently utterly unable to obtain any sleep, but seem to live both their sleeping and waking hours in a state of mind intermediate between the two.

Somnambulism.—But this brings me to speak of a state of sleep which is still more like insanity than the most wakeful ordinary dreaming, and not only resembles it, but often so runs into insanity itself, that it is hard sometimes to draw the line between it and insanity,—I allude to somnambulism. The phenomena by which we judge that this condition differs from the most wakeful healthy sleep, and approaches the confines of insanity, are, that, though asleep, the person becomes partly

conscious of the things going on in the external world, and more or less endowed with power over the motor organism: this is seen in a slight degree when people talk in their sleep, and when they even answer questions (though generally incoherently); and in a more strong degree when they walk and perform even difficult mechanical operations. I showed above that there were three broad distinctions between the healthy dreaming state and insanity; namely,—1, the external world was not so much shut out in the latter as in the former; 2, power over voluntary motion was not so much lost; 3, the former was a temporary state, and one easily aroused from, while the latter was permanent: now, however, we find that, in somnambulism, two of these distinctions are swept away, and the last alone remains.

Waking trance.—But as the somnambulist's condition becomes more and more intense, even this last distinction is swept away too, for he becomes subject to waking trance, as well as sleeping trance, and may be soon permanently in a world of vision unable to appreciate realities any longer.

The state of waking trance is one which may be considered as simply a stage in advance of the somnambulist's condition, and where there is no intimation that the person so influenced is even asleep. The only distinction which now remains between this condition and permanent insanity is the comparative endurance of the two affections, this being generally only very temporary. But, when it becomes more permanent, it forms a variety of insanity itself, and in a mitigated and very ordinary form.

Habits of profound reverie must be considered as partaking of the nature of this condition. In this state a person sinks so into some abstraction of mind as not to be conscious of the action of his special senses. He gazes and sees nothing, his auditory nerve responds to external vibrations, and he is unconscious of it at the time, though, curious to relate, he may often become conscious of the impression some little time after it has occurred.

The phenomena of slighter degrees of somnambulism are so manifestly the same as the phenomena of the more wakeful conditions of what we term dreaming, and the phenomena of waking trance so manifestly the same in kind, though not in degree, as those of somnambulism, that there is no reason to believe there is any material difference of kind in their causes; so that, if *irritable* nervous exhaustion or deficiency of energy will account for the dreaming, it will also account for somnambulism; and, as a continuation of the same chain, a different degree of the same condition may easily account for the higher conditions of waking trance, and finally for those of insanity itself. Thus, if we try to trace the causes of insanity by the causes of the dreaming and sleeping state, we see good reason to believe that it is a state of nervous exhaustion: not, indeed, of an ordinary or healthy nature, but of an irritable and morbid nature.

Voluntary abstraction.—But this leads me to my second class of deficient mental conditions, namely, that produced by a voluntary concentration of thought upon one subject to the exclusion of others, so that the subjects under consideration are most vividly impressed on the mind in proportion as others are lost sight of. The mental operation here spoken of is called attention; its result is abstraction of mind, and its source is evidently of mental origin. This faculty is one pre-eminently dependent on healthy organism; and though I revert to it here as being similar in some points to the phenomena of insanity, it evidently is not allied to it in any degree, for that operation of mind which we have declared to be chiefly or universally in a defective condition in the insane, namely, moral liberty, or the power to alter and arrange thought, is strengthened and increased in proportion as this faculty is possessed and exercised.* But though no one could believe that an insane

* It may not be out of place to say a few words on this most interesting mental faculty—attention. This faculty seems to be possessed in a considerable degree by all the higher animals; no animal, however, possesses this power in anything

person voluntarily keeps his nervous energies concentrated upon one subject, to the exclusion of all other considerations, as a person does when he tries to impress a difficult subject on his

like the same degree that man does, and the possession of this power may be said to be absolutely necessary for a being who is living for anything beyond the interests of the present moment; for if the mind was to be constantly and of necessity occupied by the strongest sensations of the moment, without the power to abstract and fix its efforts, how could we take comprehensive views of anything, much less reason on matters, or come to any general conclusions? Without this power the phenomena of consciousness would be as simple and as little capable of expansion as the functions of reflex action now are, for even the power of memory depends on this faculty. This being so important a faculty of the mind, I would now refer to a few rules by which it is controlled. 1. The attention cannot be occupied by two things at once; faint impressions may exist of the presence of many things, but we cannot fix our mind on these other things without taking off our attention from the first thing. 2. The acuteness of particular sensations is very much augmented by the faculty of attention being in operation upon the sensation: this is remarkably shown in the power we more or less possess of hearing and distinguishing a single voice out of a large orchestra when we try to do so, and concentrate our mental efforts in this direction: for if we did not thus concentrate our energies the general effect is all that strikes the senses.

This faculty of mind is capable of great cultivation. Take the last given illustration again, and see how much better a good musician, who has long directed his mind to such things, can discern one instrument from another, or one voice from a general chorus, than an inexperienced person can do.

This faculty relieves us of the consciousness of many uncomfortable impressions, as well as, by its misdirection, brings upon us many evils: as an example of the first, how many little ailments of our feeble frame escape our notice by the happy employment of our attention on interesting subjects! Why is it a person sighs after an interesting subject? All physiologists know it is a deep inspiration by which we relieve our too venous blood of some of its adulteration, and invigorate it with more of its vitalizing principle. Now the inconvenience of this too venous blood was not felt while the mind was rivetted on an interesting matter; but it was perceived as soon as the attention was let loose again, and then an effort was made to dispel the disagreeable sensation. But most smaller evils may pass unnoticed when the mind is intensely interested.

Again, it brings many evils if we misdirect it, as if we rivet it upon things which do not require the increase of sensibility it involves, but acts all the worse for their increase. Thus, if we think of winking, we cannot stop it very often, whereas only a certain amount of it is really necessary to keep the eye moist and suited to its functions: if we think much of what becomes of our saliva we are

mind; still many may think that the reason the mental operations, which are suspended in the insane, do not act, is, that some impressions have so excited the attention, that it is the attraction of these impressions, and not the loss of power over the other impressions, that causes their non-consideration; and that thus a principle of concentration of nervous energy is passively at work; and that it is this which leaves the sphere of operation of some of the higher mental faculties in a minus condition, rather than any direct paralysis of their organism. This is a nice distinction, and one which it is impossible to decide upon until more knowledge on the subject of nervous irritability is acquired. But here let me observe, that this passive condition (just spoken of) is no longer to be considered as resembling the active state of fixing the attention, but to have approached rather to the condition of exhaustion, such as that described above as reverie. I shall therefore leave the consideration of this state of health, and go on to that which is my only apology for having introduced the subject of voluntary attention while discussing the causes of insanity, namely, strong emotion, which we may call, by way of antithesis, involuntary attention.

Transporting passion.—By the third class of mental phenomena, or those which lie between the first and second classes, (being neither wholly involuntary, and consequent on vital causes alone, nor, on the other hand, wholly subject

always swallowing it, and it becomes a nuisance to us: if we think much about how we tie a shoe, we cannot do it, for custom has rendered this so much a habit as to become almost an instinct, and to require only a little of our mental energy to be expended upon it: if we think how we swallow, we instantly have more difficulty than if we leave it to nature. But above all I would draw attention to one fact, which is a most important feature in a disease I have been much interested in, namely, stammering: how much is this affliction increased if we think of how we speak, and do not leave its operation to that slighter sensibility which is all that is required for its operation. Indeed, this applies to all the spasmodic diseases, hysteria, chronic epilepsy, tetanus, &c., and gives us a great lesson, that what we call nervousness is an unmitigated evil that doubles and re-doubles any uncontrollable nervous ailment.

to the will,) I allude to the conditions of strong passion of any sort. When the mind is thus wholly engrossed upon one subject, common sensation is much diminished, if not entirely extinct; cold and heat are little perceived, and all lesser sources of pain and irritation are not taken notice of. Among some of the lower animals, whose instinctive acts are more intense than our own, this condition of insensibility is so great under the influence of strong sensual excitement, that you may cut away the limbs of some animals, such as the frog, without any apparent consciousness being manifested; and we must all know stories of the comparative absence of the sense of injuries while persons are under the influence of some enthusiastic and absorbing impressions. These, and similar states of violent and overwhelming excitement, resemble insanity very much, in that moral liberty is lost; the more elementary elements of mind, namely, instinctive impressions, are deeply impressed on the field of consciousness; the higher faculties of judgment and reason are temporarily suspended; and the impressions made from the external world, (except so far as they apply to the subjects engrossing the mind,) are not attended to. The exciting causes of these conditions are both physical and moral, and thus unlike the two preceding states referred to; as the first (the dreaming state) is one of solely physical origin, so much so that any mental resolve to sleep prevents and retards rather than accelerates it; and the second (the habit of fixing the attention) is wholly mental. But bodily and mental causes contribute to produce these conditions, and in proportion as the individual is under the influence of physical or moral agencies, so do the one or the other become the most predominant agent: thus, there can be no doubt that a certain turgid condition of the gastric follicles, and of the vesiculæ seminales, will force upon the attention the various desires with which those organs are connected: but, on the other hand, there can be no doubt that the fixing the attention upon the desires will cause the turgescence of these organs, and raise the

desires which this condition gives rise to. And, to leave the grosser instincts, there can be no doubt that all the minor *irritabilities of temper* have their origin as much in impressions of physical as of mental disturbance: ill health, hot rooms, diseases of certain classes, produce these conditions of temper as much as moral anxieties, distresses, and troubles do: and though this is no excuse for them in a moral point of view, (as we are intended to bring our physical nature into subjection to an exalted moral standard), yet if nature is left undisciplined this is no doubt the case,—so much so, that it would be absurd to consider the serene temper of perfect health more intrinsically virtuous than the rugged one of irritable disease.

There are, however, different stages of the excitement of the passions, and particularly of the grosser ones, which allow of different degrees of control: in the first stages they are in general entirely under the control of the will *in man*; but when they have reached a certain point they seem to get beyond the power of will; and this condition perhaps is as like the condition of insanity as any state can well be. Thus some persons are the victims of what may really be termed ungovernable tempers: not that they could not restrain their temper at the first moment if they only used the effort, but that a sort of automatic fury seizes them at last when the passion has reached a certain point: it requires, indeed, an extreme excitement to arrive at this point, and such as most healthy adults never suffer from. Uncontrollable hysteria is, I presume, of this nature, when the sobbing and other exclamations of distress continue quite ungovernable until a certain amount of expression of them has been in action. Such terms, however, as ungovernable temper, unrestrainable grief, ecstacy of enthusiasm, &c. &c. are used with great looseness and misapplication; for, if the will was really fully bent to repress these emotions, in ninety-nine cases out of a hundred it could be done. The fact is, that to excitable dispositions there is great pleasure in the expression of these emotions, and the will to repress them is not really called into play.

To go at length into that most interesting field of contemplation—namely, the mental conditions and bodily acts which are partly under the will and partly not,—would be opening a field of discussion much too diffuse for my present purpose; I will therefore only add that, though it may be easy to say that certain mental and bodily acts are subject to the will, and others are not, there is a vast amount of each sort which hold a sliding position between the two: in fact, I may say, while speaking of bodily acts, that some of those acts which we imagine to be wholly produced by volition are probably in reality involuntary. Thus there is great reason to believe that those acts which we may esteem peculiarly voluntary acts—namely, our steps in walking—are, after they have been once commenced, no longer voluntary movements, but act on the principle of a pendulum; and that, so far from each step requiring an act of volition, it requires a distinct act of volition to stop the alternating swing of the legs when once set in motion. Such a circumstance as this will give us some idea how little the division between acts (whether mental or physical) of a voluntary and involuntary nature is distinguished.

But, setting aside for the present the question of what the will could or could not effect in passion, we can say with truth that, when this state has once obtained its full position, it occasions a change decidedly physical in the system, and that this change is one of loss of a general and comprehensive nervous perception, and in the depressing passions (as grief, terror, &c.), it is one of decided nervous prostration and vital depression. The enfeebled state of the circulation, the cadaverous state of the surface, manifest this; and, if we want more striking instances still to fortify the point, we need only refer to that remarkable circumstance, that deep grief will cause the hair to turn grey in a very short period of time, in other words it stops the secretion of the pigment filling the tube of the hair; it will cause the cessation of other secretions also, such as the saliva, the secretion of the lachrymal gland, the secretion of

milk, of fat, &c.; and people under such influences cannot digest their food, cannot weep, cannot afford nourishment to their offspring, and become emaciated. Tears are generally thought to be a sign of grief, and so they are; but they are so only of grief or any other emotion of a certain degree of weight. When the mind is deeply oppressed, even the ordinary secretion of the lachrymal gland (such as is necessary to keep the eye moist), is retarded, and the dry inflamed eye is the sign of deep emotion, while the suffused one shows only slight emotion; for a certain amount of mental excitement will occasion an excess of a secretion, while a more intense degree of oppression will paralyse the function of the organ altogether. The history of the influence of the mind on the body in passion and emotion is replete with poetic associations and interesting anecdotes. Every one knows the sad story of Marie Antoinette: this, and other such scenes as this, have given rise to the following most true and beautiful passage:—

"Danger, long travel, want, or woe,
Soon change the form that best we know;
For deadly fear can time outgo,
And blanch at once the hair.
Hard toil can roughen form and face,
And want can quench the eye's bright grace;
Nor does old age a wrinkle trace
More deeply than despair."

We have now seen that both physical and moral causes contribute to excite the passions, but that, when once they are excited, they produce a decided physical change, which is one of limitation of nervous perception in all cases, and of nervous and vital depression in many;—that, in proportion as this physical condition is produced, the sufferer becomes less and less dependent on his will for his mental manifestations;—and that, though he might by an effort of will repress the persuasion of the physical stimuli at their origin, yet a time may come when the bodily powers are so reduced and changed by the

influence of passion, that he is no longer master of himself or able to remedy his diseased organism. When this state of things is arrived at, if it is in any degree of a persisting character, the person is really suffering from a modification of insanity, though we should not call it insanity until it had assumed a comparatively permanent character. It will make perhaps my view of the nervous condition in passion clearer if I divide it into two stages, and call the first emotion or desire, and the second passion; for though emotions form a part of passions, so far that no passions arise which are not grounded on some emotion or desire, yet the condition of emotion is by no means the same as that of passion, for in the former state the person is in a healthy state of mental excitement, while the latter state is comparatively morbid; and it is to the latter or second stage only that I refer when I speak of the nervous system as being in a condition like that of insanity. This division, also, will assist in making clear the position of the will under these instinctive excitements; for the will is perfectly able to control excitement of mind while it exists only as healthy emotion or desires, but loses its control as these mental states assume the position of overwhelming passions.

The mental state of the infant.—I will now say a few words on the subject of the condition of mind in the extremes of life, before I allude to those states which arise from manifestly external causes, as by this means I shall place together those sources of deficient manifestation which are dependent on constitutional and ordinary causes. The condition of the mental phenomena in early years is in some point similar to the condition of the insane mind, though the mode in which this condition is arrived at in these two cases is very different; the one not having arrived at the maturity of mental manifestation, while the other has lost a maturity which he once possessed. The mind of youth is peculiarly prone to a most vivid conception of simple ideas, while it has not much power of connecting and ordering those

ideas. The fervid impression of simple suggestions in early years is well known to be such as never exists again after the full powers of the mind are developed; their poignancy and keenness, indeed, are never afterwards forgotten, if once stored up in a retentive mind; and the recollection of these feelings, as well as the ability to realise again these feelings through an effort of memory, forms one of the most innocent as well as glowing sources of happiness which this world can afford. This accounts for the very vivid feelings little children have about colour, sound, and impressions on common sensations: any one who remembers well his early impressions on these subjects, and compares them with the impressions raised by the same objects in after years, will be struck with the contrast. The blue of the sea or the sky, the variegated blossoms of spring, the red and purple of sunsets, are fixed with a distinctness of pleasurable sensation not able to be realised in after years, and which, if not remembered from the days of youth, can never be appreciated. The sweet scent of a hay-field in a summer's evening, the song of birds at the close of day, the pleasurable and painful sensations raised by warmth and cold, the terror raised by some impressions on the mind, the dim recollection of scenes of very early life so pregnant with intense delight or intense anguish, all speak with one voice to the truth of what I assert. And this is the reason why reflective people dwell with such peculiar interest on this undeveloped period of existence: to them the mental phenomena of this period are like highly-finished pictures, while the after-impressions of a similar nature resemble rather cold outlines; and we may say that the sensations conveyed by dreams are more like these early impressions than anything realised in the waking state of manhood. Children, however, have not the power of reasoning, and comparing, and directing their acts of volition, to anything like the same extent that the full-developed mind of man has; and in these respects the mind of a child is similar to that of the insane, or the person deprived of powers which he did once

possess. So far there is a similarity between the phenomena of the undeveloped and the deranged mind; but this marked difference exists between them—namely, that the state of the former is that of serene health, while that of the latter is one of irritable disease and (until the higher powers of the mind are really suspended) of painful struggle; moreover, the impressions most forcibly impressed upon the mind of the child are just the reverse of those most impressed on the madman's mind; the former being chiefly attracted by the things of the external world, while the latter is chiefly dwelling upon the abstractions of his own heated fancy, and the memory of things which are past.

The condition of the sensorium in childhood, and its similarity of defective function in many respects to that of insanity, will assist us in investigating the causes of insanity *only so far*, that it shows us that the instrument of mind is capable of being reduced by disease to a position somewhat similar to that which it possessed when undeveloped; and, as we must acknowledge that an undeveloped organ is, in extent of power, a deficient organ, when compared with that which is fully elaborated, we may consider the analogy of the mind of the infant to corroborate the view that the symptoms of insanity require no more mysterious agency for their causation than simple depression of nervous power. But, though the consideration of the mind of the infant will assist us in determining this first part of our hypothesis, it will not assist us in the second and more controverted part—namely, what the source of this depressed nervous power is; for no one can believe insanity to be connected with want of development, at least in the majority of cases: indeed, the contrary to this is so much the case, that very many persons who are liable to insanity are examples of that class of nervous temperament which is subject to precocity of development; and in so far as extreme susceptibility and keenness of sensibility may be considered a refinement of mental powers, we may say they are over-developed.

The mental state of old age.—The phenomena of the mind in the other extreme of life—namely, senile imbecility, —as well as the causes of these phenomena, so much resemble those of many forms of insanity, that frequently it is difficult to draw the line between what is the result of healthy decay and what is to be considered disease. These phenomena, however, resemble those of the *second* stage of insanity rather than the first—namely, that state where all the mental faculties are becoming gradually suspended, and when no excess of any particular faculties exists: the phenomena of simple suggestion succumb equally with those of relative suggestion; the simple images of the mind gradually fade, equally with the powers of analysis and synthesis; the special senses become blunted coincidently with the more abstract efforts of the conscious being. To use the words of metaphor, in old age the stream does not, as in insanity, attempt to compensate for its deficient volume by its fury; for the channel is obliterated with the dissolution of the stream. Or, to carry out this metaphor in detail, we may say that the phenomena of old age resemble that quiet dissolution which occurs when a mighty river is approaching the close of its proper destiny, and is about to retire for ever into that ocean whither its course has ever tended its waters, as they gradually disappear, leave no marks of ruin behind, but rather a kindly soil, as a memorial of that which is passed; so that, when the pleasant hours of its vigour have passed away, and its power to soothe the traveller by the murmuring sounds of its waters and the refreshing sight of its expanse have departed, its channel and its tide can be no more traced: whereas the phenomena of insanity are like the disturbed and premature dissolution of that river, whose waters fail before its work is done, and whose channel remains entire while its tide diminishes. Fury must now do what vigour has ceased to fulfil, and the cataract try to compensate for the loss of the tide of many waters: the stream, as it seeks the ocean, continues for a space, to remind the passenger of the loss that nature's harmony has sustained, and to fill his mind with

the impressions of storm and wreck, instead of serenity and rest. And this is, indeed, the language of analogy rather than metaphor; for we may well look on the nervous vigour necessary for mental manifestation as the pleasant stream, and the general physical or vital frame as the channel, and say that, should these two lose their proper relation to one another,—should the waters diminish before the channel disappears,—the river becomes a disturbed cataract, and fury takes the place of that rest which was the result of vigour and strength.

The metaphor above given contains so very much the history of the causes of the phenomena of old age, that little more need be said. It is quite manifest that the failure of mental manifestation is owing to the failure of nervous energy, and that the failure of nervous energy is but the consequence of the loss sustained by the vital system throughout. That vital principle which, as each night has come round, has manifested the tendency to yield temporarily to its adversary, death, (to which sleep bears not only a metaphorical resemblance but a close relationship), at length has to yield up the long contest which it has sustained with its more powerful enemy. Hitherto it has yielded ground only that it might husband and restore its strength, and then come forth again with renewed vigour; but now at length its refuges are occupied by the advancing foe, and it is exposed helpless to the great and final attack. The conclusion of this protracted contest is replete with melancholy to those who have not the heart to say—

> Far better they should sleep a while
> Within the church's shade,
> Nor wake until new heaven, new earth,
> Meet for their new immortal birth,
> For their abiding place be made;
> Then wander back to life, and lean
> On our frail love once more.

Delirium caused by external agents.—Of the phenomena of delirium occasioned by the introduction of poisons into the system *ab externo*, as in the case of persons under

the effects of narcotics, alcohol, the malaria of fever, &c.; I shall say very little: first, because they have been so continually treated of by abler pens than mine, that such an attempt would be quite superfluous; secondly, because these symptoms not only resemble the symptoms of insanity, but may be termed the symptoms of temporary insanity: so much so, that nothing but the degree of febrile disturbance and the general history of the case enables us to distinguish the one from the other; and, added to this, they are frequently the exciting causes of permanent insanity. But such being the case as regards symptoms, it must follow that any physical condition which can account for the phenomena of these conditions must have the greatest interest and moment while discussing he causes of insanity. There can be no doubt, I should imagine, in the mind of any one, that that condition of the sensorium which is produced by narcotics and other ingesta of a kindred character, such as alcohol, &c., which deprive the mental phenomena of their full manifestation, in proportion to the amount that they are imbibed, is one of depressed nervous energy consequent on loss of general vitality. It is, I know, the custom to say that the first effect of these remedies is of an exciting instead of a depressing character. But this very excitement, which is accompanied by loss of sense of the higher mental manifestations, is a sign of loss of power in the nervous system, for that static power which is the prerogative of healthy vigorous action is gone: it is, in short, the stage of loss of tone wherein some mental operations are in irritable excess, and others more or less suspended. Take opium as one of the strongest examples: by the action of this powerful remedy every function and excretion of the body is suspended; its effects are manifested throughout the vital system; the reflex system suffers with the voluntary; the action of the heart becomes slower, and the circulation is retarded; and thus, even independently of its direct action upon the nervous structure of the sensorium, it occasions that condition where the cerebral

substance is not sufficiently stimulated for the full manifestations of consciousness.

In the same category I should place that poisonous matter acting through the blood which causes the delirium of fever, and so remarkably disturbs and depresses every vital action; the chief difference which exists between the mode of action of these agents and that of narcotics, &c. being, that this poison is conveyed in a less palpable form to the blood, and ultimately to the nervous system.

There was a very remarkable instance given of the immediate effect of foul air in causing delirium, in the condition of those confined in the Black Hole of Calcutta; for, soon after the air had become contaminated by the breath of so many people huddled into so small a place, those who could not get near the window evinced symptoms of delirium, which was caused of course by the non-purification of their blood; since the air being saturated with carbonic acid gas, would not allow the carbonic acid to go off by expiration from the venous circulation, or oxygen in sufficient quantities to be inspired so as to arterialize the blood. The same terrible state of things, indeed, occurs in very many slave-ships in the middle passage, and numbers die in the frenzy of delirium.

Delirium occasioned by poisonous matter of internal origin.—But there is a state of delirium, occasioned by poisons acting on the system, of a far more interesting nature in the present inquiry than that which has a simply external origin; for, with those poisons which have a definite and direct external origin, and which do not depend for their action upon any internal peculiarity, the delirium of insanity can be thought to have but little connection. The delirium I allude to is that which arises when various matters injure the system, and become poisonous, owing to strictly internal causes: and the root of the evil lies in a pre-existent organic derangement, rather than in any external agent of

a peculiarly poisonous nature. There are various ways in which poisons of this nature may arise and act. First, there are poisons *generated normally* in the system, which do not ordinarily act as poisons, because they are carried off from the system by healthy organs; urea is an example of this nature. Urea is formed by the processes of secondary assimilation, consistently with health; but it is intended for excretion only,—it is, as it were, a part of that refuse of the digestive processes which must be eliminated from the body in order that the body may enjoy the continuance of health. For if the kidneys, the proper elaborators and emunctories of this principle, are diseased, this product may be thrown back upon the circulation, and, by poisoning the system, render the nervous machine unfit for its proper vocation. Secondly, there are poisonous matters which are generated in the system in a wholly unhealthy and abnormal manner, which have no proper or peculiar channel by which they may be carried off, and thus act injuriously on the nervous system, either by directly injuring its structure, or by poisoning and rendering imperfect its proper stimulus to action. Scrofula, cancerous deposits, scurvy, &c., act in this way. Thirdly, there are certain elements necessary for the repair and nutrition of the system, received from without in a healthy and normal manner, but which, owing to a torpid or diseased state of the vital organs, may accumulate, so that, by its very excess, that which was intended for nourishment may act as a poison. Thus, if any of the elements essential for organic life,—hydrogen, nitrogen, or carbon, accumulate in the system and are not carried off, in their proper combinations, by the liver, lungs, kidneys, &c., they may form unhealthy products, or occasion such an excess of what would be healthy, if only in moderation, as to poison the system, and incapacitate the nervous organism.

The delirium occasioned by such methods of poisoning as these is the more interesting (as I just now observed), because it may, and often does, depend upon *the simple depression of the*

vital powers, as well as upon the functional or structural disease of any particular organ. *Sleep* is occasioned by a process of this nature; for, as I have already stated, it is believed to arise from stupefaction of the nervous system occasioned by deleterious non-stimulating blood, and this state of the blood to arise from a want of vitality (consequent on exhaustion) in the processes necessary to purify it. But, more than this, it will presently appear that I believe the causes *of insanity* to have an intimate alliance with this species of poisoning, if we may call it by such a name. I will not, however, say more at present on this form of delirium, for many reasons; and among them, —first, that it is a subject so replete with matter, that if I were to attempt anything but a casual allusion to the existence of such a state, the attempt would introduce me to a subject upon which a volume might be written, without much diminishing the matter still to be treated of;—secondly, that there is nothing peculiar in the phenomena of this delirium which would require any specific attention in this treatise;—thirdly, I propose to allude briefly to this mode of poisoning the system, when I make the few observations which I meditate upon the relation that the state of the vascular system in insanity holds to the disease generally; which consideration will come more properly into place when treating of the physical condition of the insane. I will only add, that it is practically very difficult to draw the line of distinction between those poisons which are of external and those which are of internal origin, as the history of the two modes of injury is so intimately combined: thus, it may be said that oftentimes poisons of a purely external origin would not affect the system, if it was in full vigour; and again, internal ailments would frequently not occasion such injurious results as they do, were external agents as innocent as they are esteemed to be, and as the same agents frequently are.

Delirium occasioned by mechanical pressure.—But there is another condition—which occasions symptoms very similar to insanity,—which is, indeed, often an exciting cause of insanity,

—and which may be esteemed the proximate cause of some forms of derangement of mind (especially where complicated with paralysis), and that is cerebral pressure, however produced. The symptoms produced by, and the mode of action of, mechanical pressure, are so simple and manifest, that many writers seek to establish this source of nervous inefficiency as the only one which can account for insane phenomena. It is found that nervous matter loses power and tone when any mechanical substance presses upon it; and it is easily proved, that nervous matter requires perfect freedom from pressure, by the results of certain ordinary positions of the body, injuries, &c.: thus, when we sit with one leg under us, it falls asleep, or, in other words, loses nervous power,—both sensation and the power of motion are impaired. Again, when by accident or otherwise a portion of the skull is depressed upon the sensorium, mental powers are obscured. But it is found that other circumstances besides mechanical pressure will effect the same results,—as, for instance, *any thing* which interferes with the freedom of a healthy circulation: thus, various positions of the body which interfere with the laws of gravitation (so far as these laws operate on the circulation) will produce these effects: moreover, the absence of sufficient blood, or the absence of sufficiently stimulating blood, causes the same conditions of nervous deficiency; and it is most probable, in the case of simple pressure, that the nervous deficiency, which continues for a time after the pressure is removed, arises from the interruption of the circulation, for nervous matter is surrounded with a net-work of vessels, and pressure on the nervous matter must interrupt the course of this stimulating fluid, which is so necessary for nervous action. In searching, therefore, for the proximate causes of insanity, we should take the more comprehensive cause, and not the more confined one, and say that any thing which will interrupt the due relations of the vascular and nervous systems, whether of a mechanical or chemical nature, may occasion it. At the same time, we must remember that, for full nervous power, nervous

continuity is as necessary as nervous stimulus, and that pressure will cut off continuity, when it does not interrupt the total vascular stimulus; as when the nerves of the leg may be well supplied with blood, though rendered unequal to voluntary action by a pressure which cuts off the continuity of nervous influence between the limb and the brain. In short, we may say that whenever we can find mechanical pressure causing derangement of mind, there we may well look on it as the exciting cause of the disease, and that its removal, when possible, would probably be our great remedy, provided it had occasioned no irreparable injury. And, as I said before, it is only because we do not find this cause always existent in the brains of the insane, and because we find many persons suffering from this source of disturbance, and not evincing insane symptoms, that we are compelled to seek for a more subtle and comprehensive causation.

SECTION III.

Having given an account of many of the phenomena of insanity, and, secondly, of the phenomena as well as the probable causes of other conditions which resemble insanity in one way or another, I now come to those inferences which are to be deduced from these considerations,—namely, that insanity is most probably consequent upon loss of nervous power, and that this loss of nervous power is consequent on depressed vitality. I would say a few words upon these two points separately.

The first inference which I wish to draw from the above comparison is, that the symptoms of insanity are simply the consequence of loss of nervous power, and require no other or more metaphysical suppositions to account for them. We have seen how close the connection existing between insanity and the various conditions given above is in various different ways. First, we have seen that the various conditions given above are good analogies of insanity, in being imperfect conditions of

mind, where some mental operations are in excess while others are deficient (this, indeed, was the original point of analogy).

Secondly, we have seen that insane phenomena very much resemble many, if not all, of these conditions *in their detail*, at different stages and under different variations of this melancholy disease. For example, some forms of this disorder are extremely like the delirium of fever and of intoxication in their various stages: these are the more acute and intense forms of the disease, and there is often some difficulty in discerning between these conditions and insanity, when the physical symptoms of acute mania are very prominent: indeed, nothing but the general history, the state of the muscular system, the degree of obscuration of the special senses, and the degree of the typhoid symptoms generally, will distinguish acute mania from the delirium of fever. Again, other forms of insanity, particularly in chronic stages, when physical symptoms have much remitted, resemble the conditions of mind of the extremes of life,—namely, either first or second childhood; and it is hard to distinguish between the state of mind (at times) of some adult patients, (whom I see continually), and that of real childhood. Dolls and trifles are their amusements: fits of peevishness and childish passion are, like April showers, the amount of their distresses; though this state of childish placidity is, I fear, seldom as continuous as in real childhood, or as unadulterated; for this innocent condition is frequently intermitted by paroxysms of a more active state, and, even while it exists, shows in many little ways that the being before us is one fallen from a higher state, and having some memory of gifts of mind which have been taken away. Others, again, seem to be intermediate between these two states, and to be living, as it were, in a dream, not suffering the bodily anguish of the former, and not enjoying the mental placidity of the latter; but their thoughts especially resemble those of a person in a waking trance, who is half conscious that it is all a delusion; the world of vision and the world of sight are not distinguished accurately, and yet a distinction is felt. With

the exception, indeed, of the case of voluntary abstraction of mind, we may say that all the conditions alluded to resemble insanity, in one form or another; in their symptoms most intimately.

But, thirdly, our investigation has enabled us to draw the connection between insanity and most of these conditions even more intimately than is possible to be conveyed by a mere similarity of mental phenomena, whether it be a general similarity or one of mere details; for it appears that these conditions are frequently the exciting causes of insanity, and that there is often so little distinction between these states and insanity, that, where they are exciting causes, it is nearly impossible to say where the more temporary condition has ceased, and the more permanent state of insanity has commenced. For instance, when insanity is the consequence of the delirium of fever, when it results from continued intoxication, it is most difficult—nay, impossible—to say when the more ordinary and less permanent state of mental derangement gives place to that more peculiar and specific affection which we term insanity. Again, where shall we draw the line between the higher flights of somnambulism (such as that exhibited in waking trance) and confirmed hallucination? When does the passionate fury which has become habitual cease to be the brevis furor, and become to all intents and purposes confirmed madness? In cases of mechanical pressure, where shall we draw the line between what we may call the general consequence of nervous pressure, and the more special and constitutional symptoms of insanity? The transition, too, when childish non-development ceases to be the ordinary state of nature, and becomes the abnormal state of imbecility, is most gradual, and the distinction is one of degree rather than of kind; and, lastly, we may even say that although habit of attention and abstraction shows great vigour of mind while there is a perfect power of control over those habits, yet in weakened states of the body these faculties may gradually lose their active condition, and become subservient to circum-

stances, instead of being their master; and the deep-thinking man may, before he is aware of it, sink into such habits of reverie and powerless abstraction as may terminate in insanity itself. Thus in every way, whether viewed as having general or more detailed points of similarity, or as being exciting causes to insanity, or as being frequently most difficult to distinguish from insanity itself, we find these different mental conditions to bear strongly on insanity, and to give us an insight into the nature of insanity.

But we began our inquiry *with the supposition that these various conditions are departures from nervous perfection, or rather consequences of the loss of nervous perfection*; and the union being so close, as I have just shown, why need we seek for any more subtle or metaphysical cause in tracing the sources of insanity?

Before I conclude this subject, let me say that, if one form of insanity more than another conveys to my mind the sense that the disease is one of nervous depression in its simplest form, it is that which I have placed as the fourth modification of the disease; for in this form we are not perplexed by the presence of increased excitement or active violence, until, indeed, an extreme paroxysm of distress occur.* In this form the mental phenomena are evidently at a very low and vacillating point; there is a power of discernment of truth very often, but it is very weak, and coincident with this a very weak condition of the physical powers: indeed, in these cases it is peculiarly manifest (even without entering into chemical or physiological laws) that the feebleness of mental tone depends on the feebleness of physical health. You never find, I believe, a robust and

* In saying that this variety conveys the idea of nervous torpor in its simplest form, I particularly address the ordinary observer, who is not conversant with the symptoms of nervous exhaustion, and has not studied its laws; for such an one finds it difficult to associate excess of action with the idea of debility, though the experienced observer knows this to be a most ordinary mode of its manifestation.

plethoric person with every animal function in good action, and in the full enjoyment of motor power, suffering in this way; though you may see persons of this description suffering from other forms of insanity. The great reason why these cases impress the observer with the idea of nervous and vital torpor more than others is, because the whole system, both that allotted for mind and that allotted for physical function, partakes of the same characteristic; while in many other cases of insanity the physical system is not manifestly impaired, and requires more accurate observation to trace such deficiency when it does exist. I will here give a well-marked instance of the variety I refer to. An elderly lady has been under my charge for some years who is subject every spring, between the months of December and May, to a period of the most remarkable depression both of mind and body; during the rest of the year she is in a contrary condition, being immediately before and immediately after this state of depression in a quiet and tractable condition; but in the autumn, or rather in the middle of what we call the period of health, she is often in a very exalted and exaggerated state of mind—just the opposite, in short, to what she is in the spring of the year. There are many very interesting points in this case in all its variations, but particularly that a violent eczema is wont to break out before and after this state of depression occurs, and it would seem that the violence of this cutaneous eruption is the means sometimes of arresting the progress of her melancholic state: and this gives us every reason to believe that the exciting cause, whatever it be, which is wont to fall with all its violence on the cerebral centre, may find its egress through other organs. But of this hereafter. But the symptoms in this case, to which I particularly wish to allude, are contained in the period of depression: this lady, during this time, is afraid of every little movement that occurs around her; she is afraid of moving herself; she sits trembling in her chair, and looks as if the least extra agitation would cause her to die outright; her breathing is hurried and difficult; her limbs are in a constant

twitter; she stares at you always with an aspect of terror, the whites of the eyes being generally seen above the iris; her chief expressions are such as "Oh dear me!" "What shall I do!" It is often with great difficulty that you can get her to speak, or answer your questions; her sleep is imperfect, appetite feeble, skin clammy and moist, bowels costive, tongue often dry, pulse feeble. Here the bodily symptoms most manifestly cause the mental symptoms, for her mind does not give way until these bodily ailments have become (as they do on occasions, and particularly late at night) most excessive; then, at last, this extreme sensibility gives way to actual delusion, and she can no longer distinguish between the impressions of bodily anguish and debility, and the real objects and meaning of what is passing in the external world; her terrible sense of helplessness is driven into a belief that people intend to injure her, and she can no longer distinguish between the anxiety occasioned by the defencelessness of her own position, and the belief that injury is really intended. Now this case very much confirms a truth which I see daily stronger ground for believing—namely, that, when the sense of the necessity of self-protection (one of the first and most simple instincts of our nature) is deprived of the physical means to protect self,—when the nervous influence which is first engaged, namely, the thought of the necessity of self-defence, is rendered unable to culminate to its proper point,—the act of self-defence or self-support,—a reaction takes place at the expense of the strength and vigour of the thinking faculty: in other words, the sense of the absence of muscular power so oppresses the mind, that the cerebral system itself becomes so agitated as not to be capable of performing its functions as an instrument properly, and mental phenomena become confused.*

* This is, I believe, a great and important consideration; for, if true, it will explain many of the symptoms of the hypochondriacal, many of those of the

When I assert my belief that insane symptoms arise from a want of tone of the nervous substance, it must be clearly borne in mind that I allude to a local deficiency only, and not a general torpor of the nervous powers, as the essential cause of these phenomena: I state, as will appear a little way on, my know-

insane, besides many of the mental phenomena of persons who suffer from a weak and irritable nervous system, but who call themselves in health. I will therefore state my theory more at length. I believe that, circumstanced as the mind is in this life, (namely, acting through a nervous machinery which is common to things of thought and things of action), the culminating point of every thought which is most healthy for the whole system is an act of some sort or other; that if any circumstances, whether moral or physical, prevent such an act, the nervous energy set in motion by simple thought recoils upon itself, and does not find its proper vent: thus, long habits of abstract thought, which cannot, from their nature, end in acts, are not invigorating to the system, in the same way as thoughts which are practical are; and, indeed, if they are conducted to any excessive length and intensity, create a sensible state of nervous irritability, which nothing can so well allay as what we may term, for the nonce, a period of abstract physical action, or hard muscular labour of some sort or other, whether it has any important object or not. But if this is the case with the ordinary positions of health, much more is it the case when bodily defects and debility render the system physically unequal to action; for in this case no outlet is possible, and, added to this, the mind dwells with an ever increasing exaggeration of sensitiveness upon the subject, and thus augments a hundred-fold its own agitation. Thus, invalids and people prevented by various ailments from employing their faculties, often become irritable and peevish if they allow their minds to give way to the impressions of its physical instrument; or if, owing to disease, they cannot resist such nervous reaction. Upon this head my observations might extend to almost any length, for it is a most interesting subject to the physician as well as the metaphysician, and ought to be rightly understood by all who are interested in either mental culture or mental health; but I will here only draw one or two general conclusions, and must apologise for this digression. If the above facts are true, it shows us in a most striking manner the great necessity we are under to find employment for every mental faculty which God has given us; it shows us that those who have ardent minds and keen aspirations, require for their perfect health, physically and morally considered, a proportionate field of action, and that anything which cramps this sphere of action is deleterious; it accounts for the many miseries which idle people are subject to, and the vast injury which forms of society, that prevent the exercise of all the capacities, inflict upon individuals, and particularly

ledge of the fact, that many of the physical energies of the body are at a stand-still coincidently with insane manifestations; but still the muscular system may be, and often is, very powerful indeed, and sometimes in a state of morbid excess, in the insane. Therefore, though persons suffering from general debility

those of the female sex in the upper classes of life; it is the secret consciousness of the truth of this principle that drives men, without useful employment before them, to spend days and seasons in hunting foxes or hares, and would make them equally hunt rats, if it was only fashionable, and if the haunts of these animals were more pleasant to the senses. The force of this principle forms associations of a peculiar keenness in sensitive minds: thus, we rejoice in contemplating a scene which has been one of active labour and triumphant industry, however slothful our feelings may be; while we look with nausea and disgust upon those scenes where nothing has been done and no step made in the path of life; above all, the sense of this principle within us points with the finger of unerring truth to that great and universal condition stamped upon our nature at the fall of man, namely, that we are born for labour; that while work is our doom, it may become our chief blessing, as long as we attempt not to resist its claims upon us. There are some, whom we may call the first-born of the creation, who seem to have learnt this lesson instinctively; they have a fire within them which will find fuel for its expenditure; and while they enjoy health they do most assuredly find such fuel wherever they may be thrown; work to them is not tedious labour, but the absence of it is; to these etherial and practical beings the rest of the world succumbs in the end, whatever resistance may be shown by jealous and little minds; and when such spirits are enlightened with a ray from heaven, the passage of their life seems like the transit of a beautiful dream; when they are taken away from us by the hand of death, their blessing ceases not, but casts a radiance on all those who have valued them while with them. Such beings are, however, like the single planets among the stars, few and rarely loved by him who gazes on the depressing gloom around him; and, what is more than this, while they shine thus for others, they rejoice in the glow of their own light, as they know the source from whence it springs. People of the excitable temperament peculiarly require a full realization of this great truth, namely, that thought, to be healthy, must culminate in acts; for if they find not a field suited to their energies, that which might have made them surpass their fellows (namely, an ardent spirit), by reacting on themselves, causes them to fall behind their fellows, since they cannot maintain the virtue even of a more phlegmatic disposition, namely, a serene tenor of mind; and thus they become not only a burthen to themselves, but a burthen to other people—a state of depression, however, which

are a good specimen for showing the asthenic nature of this disease (inasmuch as in them the want of tone is shown in

they might still escape from if they would, while they have the power, employ their faculties. The force of this great truth is shown most strikingly in the simplest forms of human nature, namely, the phenomena of infancy; little children are in constant action, every thought drives them to an act, and they are happy. The higher and more complex nature of grown man, whose first business it is, not to be the slave of the dictates of his animal nature, but to be their master, and to raise that nature to a world above him (whose influence he feels, though he cannot see,) cannot enjoy this simplicity of nervous action; and therefore when he energizes in abstract intellectual acts, he suffers many ailments which the simpler state of childhood is free from. This is, however, his destiny, and one not to be resisted, but only kept within certain bounds; for while it is, or ought to be, the peculiar work of childhood (or rather of those who have its guidance) to arrive at the perfect maturity of the grown man, it is the work of man to stand with his fellows between the Creator and the created: and while, in the image of his Maker, he draws his strength from above, he should let its blessed influence distil upon the lower world around him, over which he rules, but the dominion over which he holds only that it may be made tributary to its great Creator's honour. Therefore, the work of the man in health is not simply to seek the full enjoyment of his animal nature, but to take care to keep that existence in such a condition that it is suited to be a fit channel of his higher nature. This, however, is not the condition of the insane, and he should not be looked upon in this light; for he has fallen, through disease and sorrow, from his high estate; he is, as it were, again in the position of the child, and it should be the object of every philanthropic mind to replace him as far as may be in that noble position. Every means, therefore, should be put in action which may restore his nervous system; and this alone should be the end in view. Before I conclude this lengthy digression, I would add, that the proper adjustment of the moral and physical positions is, and has been since the world began, one of man's chief difficulties, and one where he has generally failed; this is not only shown by individuals, but in races: thus, one has wholly bent his attention towards spiritual conditions, as if he were already in Heaven, without sufficient care for the perfect condition of that nervous instrument which he must use while in this world. This certainly is the nobler fault, but still it is a fault; it is this which drives a man to solitude, and the absence of things necessary for his condition here; and the result of this often causes him to imagine the excitement of a diseased nervous system to be a supernatural visitation. But if this is to be reprehended because it does not sufficiently recognise a man's whole nature, what shall we say of those people who forget their higher nature altogether, and simply try to perfect their animal organism? what shall we think of that state of

every fibre of their body, and not only in the cerebral mass); yet, if I should appear to bring them forward as a specimen of what *must* occur to the general physical system before mental derangement could accrue, I should very much belie what I wish to say. But my chief fear is, that I may appear to be straining at a gnat which is most easy to swallow, in writing so much as I have done to fortify my position of the nervous nature of this disease, since everything about it so clearly points to the truth of this position: its mode of access, so frequent after excitement and exhaustion of the nervous system,—after paralyzing shocks,—after the action of depressing passions,—after drains to the bodily system, as in puerperal insanity from over-nursing, &c.,—again, its mode of departure, so frequent as health and vigour of body returns;—these and other such considerations plainly indicate what I state. Most susceptible people must know how the thoughts are inclined to wander when they are much exhausted: they must have frequently experienced a sense, when, through over-excitement, they have laid awake at night in a sleepless state, that they had not due control over the thoughts which arose before their minds; that they are not quite aware whether they are dreaming or awake; sometimes, indeed, a sudden start of an involuntary nature (such as that occasioned when consciousness no longer restrains the reflex movements) has shown them that they had been within the bounds of the sleeping state; but the gradation had been so gradual that it would be impossible to say which had been a wandering waking thought and which a sleeping thought. Even this slight degree of wandering is most unpleasant, from the sense that a man knows not where he may sink to next; the anxiety it occasions is, I believe, often indescribable: it is to

mind which exists but too frequently in our own day, which forgets its higher nature altogether, and strives only to pamper its animal instrument? If the former becomes visionary, the latter becomes lower than a brute; if the former tries to soar among angels before his wings can bear him, the latter tries to grovel among beasts, and cares not for his degraded state.

the mind worse than sea-sickness is to the general frame, and produces a sense of helpless misery somewhat akin to it.* And, if these slight affections are so distressing, those who have experienced them may in some degree imagine the distress of some persons who are insane. But this degree of wandering may be easily and happily checked by the conviction of experience, that it will soon pass by, and that all that is necessary to be done is, to think as little of it as possible, and get to sleep amid the confusion of realities and unrealities as soon as may be. Would that a similar refuge was as easily accessible to that more terrible and permanent form of nervous depression—insanity!

The *first inference* which I would draw from the analogy to insanity of these different conditions is, that insanity is simply a disease of deficient nervous vigour. But will not these conditions of mind assist us further—namely, in the second part of our inquiry—what is the source of this nervous depression? It seems to me to offer much for our consideration.

Let us pass the different causes of mental deficiency which we have alluded to in review. Some are easily dismissed.

No one can imagine that the source of active insanity bears any relation to that of the state of mind of the infant, except in those cases where imbecility has been congenital, and which approach to the nature of idiotcy rather than insanity. Insanity is a fall from a high estate of development, caused by active disease; the states of excessive and deficient nervous energy manifested in insanity are stages of diseased action. The mind of childhood, on the other hand, is a state of health, though of non-development; the state of excessive action in the mental

* The misery in both cases would seem to arise from a sense of uncertainty and of the absence of the ordinary supports, which association and habits have rendered essential. This sense of loss, whether it be in the stability of the ground we stand upon, or the conviction of truths which usually bound our thoughts, is, perhaps, more miserable, mentally and physically, than even more active suffering.

phenomena of childhood arises from the excessive vigour which pervades the system generally in early years; while the deficiency of some mental manifestations in childhood has no connection with paralysis, but is owing to the fact that certain faculties of the mind have not yet been imparted in any degree of perfection. Indeed, so different is the state of mind in infancy and insanity, that the consideration of the former could have had no place in this treatise, were it not that it assisted in proving that the states of excess and deficiency in mental power may be esteemed as simply dependent on nervous conditions. The state of mind consequent on mechanical pressure of the sensorium cannot be supposed to bear any relation to insanity, except where this condition exists in the insane; and, even where this is manifested, there is every probability that it exists as an exciting rather than as the predisposing cause of the disease; since, as I have already stated, simple pressure, particularly when gradually effected, does not produce insane phenomena in the majority of persons, while a very slight degree of it would seem to do so in the predisposed. Habits of voluntary abstraction of mind, and fixing the attention on certain points, I have dismissed already, as in no way capable of elucidating the origin of insane phenomena, while these faculties are carried on with any degree of health.

But the sources of mental deficiency most interesting in this inquiry, are those which depend on loss of nervous power consequent on loss of vitality. In the preceding pages it will be seen I described three distinct modes by which this loss of vitality is produced. First, external poisons entering and poisoning the system. Second, moral shocks *reacting* upon the nervous system, and exhausting or rather depressing its vigour. Third, constitutional and internal sources of nervous and vital depression,—some of them healthy and consequent on natural depression, such as that of sleep and dreaming—some of them consequent on the disease of internal organs, such as that condition when urea, or

any animal poison or excretion, is thrown back on the system; —and we have good reason to believe that there is a third species which belongs to this class of vital depression, namely, an *unhealthy* state of depressed vitality, consequent upon an *unnatural* exhaustibility of the special organ, the sensorium, but not dependent essentially upon disease of any other organ,— such a state as we may suppose in somnambulism. From this treatise generally, it will be seen that, in my opinion, the cause of insanity is more closely allied to that of the state of dreaming, or rather that condition of irritable sleep which we find in the somnambulist, than to any other single cause of mental deficiency which I have hitherto given.

It would, however, have been more correct if I had confined the causes of depressed vitality to two instead of three heads, —namely, those of external and those of internal or constitutional origin: for, though the second class given above —namely, moral shocks reacting upon the nervous system —is specific, so far as its moral history is concerned; yet these shocks are to be looked upon rather as an exciting than as the proximate cause of the mental condition of those under the influence of them; the proximate cause being an unnaturaly exhausted or depressed vitality. It is difficult at first sight, however, to determine whether to place this cause of depression under the first head of external agents, or under the second of internal agents; for, though its historic position is an external one, so far as that it is something which has occurred in the external world which has produced the condition, yet the physical condition of the person prostrated in this way depends upon a peculiar internal constitutional weakness, which cannot stand a shock which others would endure without succumbing; it, therefore, in reality belongs to the second class of vital depressions.

To sum up, then, the *second inference* which I would draw from the investigation of the various mental conditions given above; I would say, that I believe the state of nervous de-

pression in the insane does not essentially depend on poisons *ab externo*, on pressure, want of development, &c., but rather to be consequent upon a constitutional and congenital want of vital power in the brain, which manifests itself by such a state of exhaustibility as is unlike the ordinary exhaustibility of healthy nature, is of a more permanent character, and occurs prematurely when compared with the vital condition of the general system. That external agents act as exciting causes to this state of loss of vigour, but that both the predisposing and proximate cause is in the organ itself. And (anticipating somewhat what I have to say on the relation which I believe deterioration of blood to hold in the pathology of the insane), I would say, in the terms of microscopic anatomy, that I believe the fault to exist in the nerve model rather than in the matter assimilated.

END OF PART I.

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PART II.

CHAPTER III.

THE PATHOLOGY SUPPORTED BY THE GENERAL PHYSICAL CONDITION OF THE INSANE.

Recapitulation, and explanatory remarks on the preceding chapters—On the relation the state of the vascular system in the insane bears to the disease. 1. Inflammatory action. 2. Deteriorated blood. 3. The blood as a means of mechanical pressure.—On the general depression of the physical powers manifested by the insane. A digression on the extreme sensibility manifested often in periods of depressed vitality.—On the prevalence of insanity in the female sex as corroborative of the theory.—On the prognosis of insanity.

In the two preceding chapters I have dwelt on the *probability* of Insanity being a disease of loss of nervous tone, and the probability of this loss of nervous tone being the consequence of a local want of vitality. I would now take up the more practical ground of proving these points, as far as I can, from the actual physical condition of the insane (particularly in the acute stages), as well as from the result of practice directed on these hypotheses.

Before I do so, I would restate the conclusions which I urged at the end of the last chapter. They were to the effect, that those persons who acknowledge that the delirium consequent on the ingestion of any external poison, such as alcohol—the delirium consequent on the natural exhaustion of the sleeping state, which we call dreaming—the delirium consequent on the unnatural exhaustion of the state of trance—the imperfect mani-

festation of mind which obtains at the extremes of life, &c. &c.—are the results of want of power in the nervous system, have no sufficient reason, in my opinion, for refusing a similar verdict to the insane state, provided any sufficient agent could be adduced with sufficient probability. Secondly: I endeavoured to prove the agency from which loss of nervous tone in the insane arose, by comparing the various modes in which delirium or imperfection of mind are occasioned, by showing reasons for believing that many of them could have little, if any, connection with the cause of insanity, while others gave very palpable signs of relationship.

Should any one complain of my thus confining the sources of insanity, and ask why one person should not be suffering from a condition of poisoned blood, another from injury of the brain, another from pressure, and another from moral shocks, &c., I have but to reiterate what I have so often stated,—namely, that all these may be and are exciting causes, but they will not and cannot occupy the position of an explanation of predisposing or proximate causes: for we must find some means for accounting for the facts, that all these things happen to many men, yet only a few succumb to that comparatively permanent condition—insanity; and that these few are known so generally to have an hereditary taint, that it becomes necessary to seek for constitutional causation.

Being driven, then, to such constitutional sources, and finding no palpably adventitious growths, anatomical malconstructions, &c. as *essentially* necessary to the insane condition, I have been induced to go, as it were, to the root and bottom of the matter, and suppose the evil to arise from a premature failure of the full vital power of the organism connected with mind. The comprehensiveness of this theory is one of its greatest advantages; for it can include equally the insanity arising from moral shocks, from bodily disease, or from an actual lesion of the brain itself: while, if we rested content with an anatomical cause alone, how could we account for the insanity produced on

a sudden by a moral shock? and, on the other hand, if we looked to mental causation alone, how could we account for that produced evidently by bodily disease or physical injury?

The failure, indeed, of the proper vital powers in an organ such as the brain may be said to be produced in three different ways; or, to use more graphic words, the brain may be said to lie exposed to three cross fires,—one from above, one from below, and a third from its own level. By the first, I mean agency of a mental character, where the mind reacts on the brain; by the second, agency of a general physical character, where ailments of the body affect the brain in one way or another by the third, structural injury of the brain itself.

Of course the loss of vital power here referred to is no necessarily to be esteemed a final one; for the brain may fail in power, and be restored again, by a great capacity for recovery: this may repeatedly happen. But the insane persons, whose symptoms are *most* capable of relief, manifest, in my opinion, a tendency towards this description of failure; while those who have wholly succumbed to the disease are but more striking instances of the same class.

To the practical man I am well aware that the last chapter may appear needless, and hardly to strike at the right point. He will say, I do not require to have it proved to me that insanity is a disease of nervous origin, for this I believe already: I do not care for such an ultimate causation as that sought for (according to the last observations in the second chapter) in the dim history of fœtal life: it is of comparatively little importance how much the nervous position of insanity may depend upon a congenital want of development, or a congenital infirmity of a fully developed tissue:—what I want to know is, how am I to treat acute insanity? What relation does it bear to phrenitis—what relation to delirium caused by nervous irritation or nervous prostration? Am I to bleed and mercurialise, or to use opiates; or, thirdly, am I simply to support and invigorate nature?

As an apology to such an objector, I beg to say, that I hope the contents of the latter half of my remarks may be more suited to his requirements; that I am by no means unconscious of the truth and importance of such objections; and that I believe unpractical theories to be, not only flimsy and weak, but dangerous, if they place out of view more important questions. But at the same time I would observe, that these remarks do not pretend to be a general manual of practice, but rather to be an attempt to shed some light upon the hidden origin of the disease, and to prove that the conclusions arrived at have been supported by the results of practice.

I propose now to treat of the actual condition of the insane as one of nervous and vital depression; and, as a commencement of this, to show that the relation which vascular conditions hold to insanity are corroborated of my theory.

SECTION I.

On the relation the vascular condition holds to insanity.—I would treat of this relationship both in its vital and its mechanical aspects, and divide the subject into the three following heads:—

1st. What relation does inflammatory action bear to insanity?

2d. What relation does deteriorated blood bear to insanity?

Both of these questions refer to the blood viewed as a vital agent, and involve the question of abnormal nutrition and abnormal stimulus.

3d. What relation does the blood, viewed as a mechanical means of pressure on nervous matter, bear to insanity?

On the relation inflammatory action bears to insanity.—My view of this important subject is,—1. That no doubt frequently great congestions, and sometimes inflammatory action, in the brain, take place in persons subject to insanity; that, when

they do so take place, they aggravate the violence of symptoms in all cases; and very probably, in many cases, the insane paroxysm does not occur until the infirm brain is subjected to this deleterious influence;—2. That this inflammatory action is to be considered of an asthenic nature;—3. That inflammatory action can under no view of the case be the original cause of insanity;—4. That it cannot be looked upon as a condition essential to insanity;—5. That the presence of inflammation confirms rather than invalidates the theory that insanity is a disease of nervous and vital depression.

I propose to support these assertions by some observations, *First* on the history of the insane while living, and *Secondly* by the phenomena revealed by the dead body.

I. Arguments from the history of the insane.

I will discuss the above conclusions in the inverse arrangement that in which I have proposed them.

1. *The presence of inflammatory action in the brain would corroborate and not invalidate the theory, that insanity arises from nervous and vital depression.*—If an organ takes on inflammatory action under circumstances when others would escape, it implies an infirmity, not an excess of vigour in its organism. Moreover, the perfection of strength or vigour of function in nervous matter is shown by tranquil action, not by violent excess. It is necessary to bear these two points constantly in mind, otherwise a great mistake is likely to be made by those who are misled by the inaccuracy of scientific language, and who do not think and judge for themselves: for many expressions which are used would give a person the belief that inflammatory action conferred on the brain increased vigour of function. This conclusion would be arrived at through the pathological mistake, that inflammatory action involved an increased nutrition of an organ; whereas in fact it involves a depraved nutrition, not an increased vigour of nutri-

tion. (For such matters, on this head, I would refer to Mr. Paget's Lectures on Inflammation, and Dr. Carpenter's observations in his Human Physiology.) What the brain wants for its proper stimulus and nutrition is not a stagnant abundance of blood, but *fresh arterial blood*. Now inflammation of any sort, by stopping the circulation through the capillaries, in fact only loads the brain with carbonized blood, and prevents the approach of arterial blood to the parts inflamed. Inflammatory action may be called sometimes sthenic, when we are thinking of *treatment;* but to think further that increased vigour of function is involved in this term, is a simple mistake, though not an unnatural one. And I think I may add that depleting measures, used in active inflammation, are to be viewed as useful, rather in the way of unloading congested vessels, freeing the circulation, and ridding the system of a poisoned fluid, than as a means of exhausting the real vigour of the system.

2. *The best argument, that inflammation of the brain is no essential condition of insanity*, is, that extravagant insanity so often exists without the least trace of it. There is no fever, the face is pallid, the skin damp and cold; every thing about the appearance of the body giving the indication of anything but inflammatory action, and yet the mind in a state of most extravagant delusion. These circumstances should force upon our attention the great physiological doctrines, that the absence of sufficient blood, or of proper blood, may cause all that nervous excitement and paralysis that the undue pressure of blood will produce,—that nervous vigour is in the mean, and nervous excess and prostration in both extremes.

3. I do not believe that, however much delirium may be occasioned by the presence of inflammation in the brain, any one could imagine that ordinary active inflammation could be the ultimate or constitutional source of insanity. For in truth, inflammation is not a source of disease at all, but rather a consequence;

and in one sense it is not even to be esteemed strictly a part of disease, but rather an attempt at reparation—that is, it is not the hidden evil which gradually brings the body into the infirm position at last manifested, but the reactionary process by which nature is endeavouring to regain its mastery over disease: it is, in short, in the case of the most active inflammation, merely a work of abnormal nutrition; while, as inflammation becomes more chronic and malignant, it ensures a more and more depraved nutrition. As a proof of this history, take the most genuine and active process of common inflammation, namely that which takes place after an external wound, and when an effort is made to heal by the first intention. No one could believe, in this case, that the health of the part was first destroyed by the process set up to heal the wound; for here the original injurious agent is too manifest, and the work of the inflammatory process is too conspicuous. Healing by granulations is but a degree removed from the case just mentioned: and the same must be thought of those more hidden and less active inflammatory processes which are set up to repair the injury inflicted upon the system by more subtle and less violent agents: as when over-exertion of a part, poisons *ab externo*, a failure of nutritive power, &c. &c., interferes with a healthy nutrition.

Now this doctrine is not a pathological theory alone, but a most practical truth, and particularly so in insanity; for whenever any symptoms like inflammation exist, provided it is only possible to restrain them from causing any structural injury to the brain, I always hail such symptoms, in a recent case, as indicative of a curable condition. For in these cases, not only are the symptoms upon which we ground our curative measures more plain and simple than in cases where the bodily organism appears to yield without a struggle, but nature herself seems inclined to assist in the work of repair, by exhibiting this reactionary process; and I believe I give the judgment of most practitioners who are intimate with insanity, when I say, that I had rather receive a patient under my care

who exhibits bodily symptoms of great activity in conjunction with his maniacal furor, than an equal or even a less amount of mania with the bodily functions rightly performing their part; it being so much more hopeful to assist and restrain nature in her operations at repair, than to stimulate an effete nature into work again.

4. *Inflammation, if it exists, is not of a very active nature, for Insanity is a disease that will not bear antiphlogistic treatment.*—Physicians who are most conversant with insanity have generally come to the conclusion that whether any inflammatory action exists or not, it is a disease of an asthenic nature, and that to treat it as if it were of an active inflammatory nature is contraindicated and dangerous.

What has assisted them very much in forming this opinion is the fact that in former times, when a contrary one was held, and antiphlogistic remedies were used; when bleeding, emetics, and other such means were applied (with a marvellous absence of all discrimination of cases) cures were at a much smaller per centage than they are now under the present more rational mode of treatment. The following figures drawn up from the reports of Bethlehem Hospital will show the great improvements in this respect.

If we take one hundred years of the reports of Bethlehem Hospital, ending Dec. 1st, 1848, we find that, taking the average of the whole number received during that period, 41 per cent. of the whole number recovered, while 9 per cent. have died. This is the general average. But now mark the contrast of the recoveries and deaths of the two extremes of this century: in the five years ending 1753, only 33 per cent. recovered, while 35 per. cent. died; in the five years ending 1848, 54 per cent. recovered, and only 5 per cent. died. And if we take all the intervening similar periods, we shall find this improvement of later days to have been a progressive one. Thus the contrast in favour of the modes of treatment, when the use of the lancet is hardly

known, and every thing is done to increase the vigour of the constitution, is extremely remarkable; even if we make allowance for the ravages of that deadly disease, the small-pox, which was active during the earlier periods of the century, and comparatively unknown in the latter periods.

But, besides this negative evidence, the positive symptoms of insanity reveal a greater resemblance to those of nervous irritation than to those of acute inflammation of the brain. In ordinary delirium among the sane (to use an Hibernicism), we have two most opposite conditions presented to us—namely, that caused by inflammation of the nervous matter of the brain and its membranes, and on the other hand that caused by irritation, which, though rather a vague term, is full of meaning: the first we call phrenitis or encephalitis; the second is named, from a frequent but not necessary accompaniment of this sort of delirium, delirium tremens. These conditions are widely distinct, and to mistake the one for the other is most dangerous, and often fatal. But this distinction is chiefly manifested in the results of treatment; for, while the strongest antiphlogistic remedies are necessary for the former, loss of blood is most injurious to the latter. "Touch such a patient with the lancet," Dr. Latham used emphatically to say, "and he will die."

Now, these two forms of delirium being our two extremes, which of these does insanity most nearly approach? This is the practical question. And the answer, I believe, is, that whilst these are each active and acute affections of a general character, insanity would appear to be a specific disease apeing under chronic forms both of these affections. Take the following excellent contrast drawn of these affections by Dr. Watson, and then compare them with what we know of insanity. Dr. Watson says, p. 123, "The circumstances which most distinguish one form of disease from the other are to be found in the pulse; which is hard and resisting in the earlier stages of inflammation of the encephalon, soft and compressible in

delirium tremens; in the tongue, which is mostly parched and rough in the former, moist and creamy in the latter; in the skin, which is hot and dry in the one case, covered with sweat in the other: in the countenance, which is flushed in inflammation, and mostly, though not always, pale in delirium tremens: in the tremors, which are not common in the primary periods of inflammation of the brain: in the usual absence of headache in delirium tremens; and in the peculiar characters which I need not recount of the delirium of the two cases."

Now, I again ask, which of these two extremes do the early and active stages of insanity most resemble (for the early stages are the only stages we can at all contemplate in this inquiry). The natural and impulsive answer of an experienced person would be, that it is sometimes like one form, sometimes like the other, but of a mitigated and chronic form in either case. In one patient you have heat of head, flushed face, red eyes, furred tongue, dry and hot skin, &c.; while in another you see the cool skin, with a damp and greasy perspiration upon it, the pale cadaverous face, the creamy tongue, &c. of delirium arising from anæmia and nervous irritation. But, on due consideration, and especially when thinking of treatment, it is the safest plan to look on the symptoms as belonging more to the latter category than the former; especially when we know that *frequently the delirium of irritation is accompanied with febrile symptoms.* Thus, Dr. Watson says, p. 384, when speaking of a certain form of delirium tremens, "You find him with a red face perhaps, and injected eyes, talking wildly and incessantly, fidgetting with his hands, affected often with tremors in the limbs, having a rapid pulse, and bathed in sweat." Now we could hardly have a better account than this of many of those cases which assume the more febrile character in insanity, if we except the accidental matters of the tremors. And, to draw the resemblance between insanity and delirium tremens still closer, the same author says, p. 389, "That delirium tremens is not confined to drunkards, although it is so commonly connected with that pitiable vice

as to have been called mania e potu. You meet with it occasionally in men who have overstrained their nervous system by other modes of strong excitement." Again, "it is a very common result of bodily injuries and accidents." Such remarks as these show plainly that this delirium is not peculiar as the result of the poison of alcohol, but also of any of those many exciting causes which can and do occasion the more permanent disease, insanity.

The great remedy, however, of either the one or the other fails in insanity generally: general bleeding is deleterious, and may easily occasion, and, I believe, has often occasioned confirmed dementia; and, on the other hand, opium seems to lose its power, and except in certain cases, such as puerperal madness, exsanguine cases, &c., does as much harm as good.

But, of these two remedies I dread the former the most; and believe that it cannot be impressed too strongly on our minds, that the presence of increased vascularity alone, is no sign of such inflammatory action as requires antiphlogistic treatment. Dr. Watson speaks most positively on this head, when declaring the treatment of delirium tremens with increased vascularity; he says that these cases neither show the anatomical characters of inflammation nor yield to the remedies of inflammation; and Dr. Abercrombie, who does not seem to have realized so strongly the specific nature of delirium tremens, speaks of it as a dangerous modification of disease which shews only increased vascularity, and requires a peculiar mode of treatment.

5. *At the same time, to deny the presence of great congestion of blood in the head in acute mania, as well as some low forms of inflammation, would be most absurd, and apart from the truth.* During life we must be repeatedly struck with the redness of the conjunctiva, the whipcord appearance of the temporal arteries; and the pain complained of in the head as often very great, and much relieved by local depletion. These symptoms ought, however, in my opinion, to be looked upon as

the incidents of insanity, rather than as the true characteristics of the affection; and I am inclined to view these states of congestion as more allied to the consequences than the causes of nervous irritation, though, undoubtedly, when they are established they are great aggravators of nervous irritability. What I chiefly wish to infer by this is, that the presence of this condition of the vascular system would not cause me to give up the asthenic view of mania. I should look on these congestions as a sign of want of strength, not as symptoms of a plethoric condition; and I would say generally that I would employ all means suited to maintain strength and vigour that I could; while I would decline the employment of all means that would tend to defeat the object, so far as I could possibly feel myself justified in omitting their employment. I would act, moreover, under the belief that the congestion of blood in the brain of the insane has often as much to do with stagnation of venous blood, (owing to such a deterioration in its vitality as causes it to be tardy in its progress through the vessels) as with any active or inflammatory condition of the blood. But more of this when I come to speak of blood deteriorated without inflammatory action.

II. Arguments from the necroscopy of the insane.

But what does necroscopy reveal to us on this important subject?—For this mode of investigation to be at all perfect, it is very necessary that we should be able to compare accurately the symptoms during life with the results of observation on the dead body; otherwise, no accumulation of post-mortem dissections is of much avail. There is at Bethlehem Hospital a wide field of post-mortem observations, made by Mr. Lawrence, but I am not in a position to place these observations in juxtaposition with the symptoms during life; and thus, though the tables below may in some degree intimate how far the brain of the insane may differ from the healthy brain, they do not enable us with any accuracy to determine the functional

results of the defects we observe. I will give here a syllabus of the necroscopy, during a period of many years, at Bethlehem Hospital; at the same time acknowledging that I am indebted to Dr. Webster's most interesting papers (read before the Medico-Chirurgical Society), for the ease with which I am enabled to offer this syllabus. Mr. Lawrence's observations include an account of every important organ in the body, but I propose to confine myself to the *cerebral* alterations. I have before me an account of 175 post-mortem examinations; and out of this number the following number of abnormal cerebral conditions were found:—

Pia mater infiltrated . .	in 145,	or nearly 5-6ths.
Turgidity of blood-vessels .	127,	about 5-7ths.
Fluid in ventricles . .	120,	about 5-7ths.
Arachnoid coat thickened or opaque,	62,	about 1-3d.
Colour of brain altered . .	45,	about 1-4th.
Bloody points observed in cut surfaces,	32,	above 1-6th.
Blood effused in cranium, or other morbid alterations of structure .	32,	above 1-6th.

This account is very interesting, as making it probable that the great majority of the insane, who die, suffer from congestions of blood in the meninges, and that a few offer symptoms of at least a chronic inflammation in those parts. But before this table can bear even that importance which the strongest supporters of anatomical alterations of structure could hope for, we ought to know the form of insanity,—the period after the commencement of the disease at which death occurred,—the epiphenomena of death (for frequently the causes of death may occasion appearances which have nothing to do with the sources of their mental disease),—the exact circumstances of the post-mortem examinations (for frequently the phenomena revealed are simply the result of decomposition, gravitation of the body, &c.) We ought, in short, to be able to compare accurately the

history of the person while living, with his history when dying and when dead.

But these appearances are not necessarily those of inflammation.—With regard to some of the principal alterations above referred to, I must observe, that they are no sure indications of an inflammatory tendency, much less of the previous existence of inflammation of the brain. Vascular congestions and serous effusions may simply be the result of a retarded circulation and a relaxed condition of the vessels. What Dr. Watson has observed generally about vascular congestions and serous effusions witnessed in the brain of the dead body, is most worthy of remark here. Thus he says (page 370 of his Lectures) :—"Now this thin serous liquid, thus collected in the meshes of the pia mater, may be the event of inflammation of that membrane; but it may also be produced, and it very often indeed is produced, by simple congestion and remora in the cerebral veins."

But suppose we grant that there exists a chronic inflammation in the brain of most insane persons, it is no sign that there exists any such excess of action as requires antiphlogistic treatment to subdue it; for such a chronic inflammation is to be esteemed a condition of things which is improved by the employment of the vital stimuli than the contrary. What Dr. Watson says on the subject of *chronic inflammation* in the case of delirium tremens, is very interesting here; for, as I have already shewn, I believe the nature and history of the insane brain to bear a much closer affinity to that of the delirium of nervous irritation than any other form. He says (page 395) :—"I have on several occasions seen the arachnoid thicker and less transparent than is natural, and sprinkled over with little spots or streaks of a milk-white colour. Changes of this kind we believe to be owing to chronic inflammation of the membrane." Again (in the same paragraph, and continuing to speak of delirium tremens) :—"I believe that disease (delirium

tremens) to bear the same relation, and no other, to the chronic arachnitis in such persons, as to the chronic hepatitis, to which they are equally subject." Now we know that delirium tremens will not allow of antiphlogistic treatment.

We may lay it down as a general rule, however, that nothing short of the presence of the genuine results of inflammation, such as deposits of lymph, of pus, false membranes, &c., can prove the fact that genuine inflammation has existed.

At least the congestion and inflammatory action are not dangerous to life.—The records of Bethlehem prove certainly that the alterations which take place in insanity are not of a very fatal character; for the average of life is remarkably long among the incurables:* thus, out of 21 cases which have died there within these last five years, 7 reached their 60th year; while 50 years is the average length of life of the whole 21 cases; (and this is, as is well known, a long life when compared with the average

* The incurables are the only cases with which I have reckoned when making the above average, because, owing to the rules of Bethlehem Hospital, they are the only permanent cases—the only cases which have gone through the acute as well as the chronic stages of insanity, and therefore the only cases with the whole of whose history we are acquainted. The curables, (who are obliged to leave, whether cured or not, at the expiration of one year,) leave and give place to others, and we know not, consequently, the length of their lives. To take an average of the deaths of the curable cases under these circumstances would not, of course, be a fair average, because the average of deaths in the early stages, when the symptoms are most acute, must be a higher average than in the later stages. And suppose there are 400 curables in Bethlehem at one time, it must accrue that the deaths among this number, if it is constantly fluctuating and giving place to fresh recent cases, will be far greater than the number of deaths in a similar number if they were permanent. On the other hand it may be said, that the incurables are all cases which have escaped through the dangers of the early period; and so it is unfair, in the other direction, to reckon the average of these deaths to be the average of the deaths of the insane generally. These circumstances, therefore, render it very difficult to make an average of viability at Bethlehem Hospital. The average length of life, however, of the curables and incurables together, and under the circumstances above alluded to, is about 45 years, which is a long life. This average is taken from 121 patients who died in the hospital in the five years above alluded to.

of the population); while the average space of time between the commencement of their madness and their deaths is about 15 years. And even out of these 21 cases, only two died of disease of the brain (unless, indeed, we count some of those who died from what is termed exhaustion as coming under this category). The causes of death in these 21 cases were as follows:—

9 Diseases of the thorax.
4 Diseases of the abdomen.
5 Died of exhaustion.
1 Died of cancer.
2 Died of disease of the brain.

I must confess, however, that the reports of county lunatic asylums generally do not convey so favourable a report as this, as I shall show hereafter.

M. Esquirol supports this view of the non-fatal nature of insanity when he says, that out of 176 females whose dead bodies he examined, only 6 appeared to have died from lesions of the brain; which lesions and the attending symptoms were proper to apoplexy. When making these remarks, however, he draws our attention to a very remarkable circumstance, namely, that male patients die much more than females from head affections, and are much more the subjects of general paralysis.

The above scale of mortality is the more interesting when treating of the asthenic nature of insanity, for it attests to the truth and efficacy of the present mode of treatment, notwithstanding the frequent *appearances* of an inflammatory action: and observe, that while the first table, given above, gives us reason to believe that the brain, in most insane persons, may have suffered from congestions and many from chronic inflammations, this second table shows us the happy results (as regards life especially) of the present mode of treatment, which consists chiefly in the employment of hygienic means.

There is, however, a great discrepancy between symptoms during life and cerebral lesions.—Even where the symptoms

during life are most carefully compared with the necroscopical observations, the result is most unsatisfactory; and for this simple reason, that the one seems to bear so little proportionate relation to the other. Thus, often a case exhibiting the most violent symptoms during life, exhibits, at a post-mortem examination, but very little alteration from healthy tissue; while the brain is capable of undergoing the most terrible havoc, and yet, provided it be not rapid in its progress, sometimes no mental injury will occur. Compare the following cases, as given by different authors:—

Andral (Clinique Médicale, Part 1, page 181), tells us of a man who during life had a good memory, and ordinary intelligence. (The disciples of Dr. Wigan will, of course, make much of this case.) When he was examined after death, there was one huge cyst in the place of the right hemisphere, of which the meninges formed the roof, the optic thalamus and the corpus striatum the floor.

The following case is from the Edinburgh Medical and Surgical Journal, vol. xxxiv. page 319:—A blacksmith received nearly the whole of the breach of his gun into his forehead. The accident was occasioned by an explosion of the piece. For days afterwards large quantities of the brain came away through the aperture of the skull; and yet he exhibited no mental defect, except a little irritability during one or two days, and perfectly recovered.

Another case, of a similar sort in most respects, is given in the same journal, vol. xxxiii. page 76, but with this interesting distinction, that in the former case the accident occurred only to the left hemisphere, while in this latter both hemispheres were injured. This case, as Mr. Solly observes, would seem to contradict the assertion of Bouillaud (Dict. de Méd. et de Chir. Pratique, art. *Enceph.*, tom. vii. page 262), that inflammation may occur to one hemisphere, yet, if the other is intact, no delirium ordinarily occurs; but that, when the inflammatory action spreads to both, delirium of variable form occurs; for

we must believe that, in such terrible accidents as those referred to, inflammation more or less was set up.

Compare the cases given above with the following :—

Abercrombie (page 65, Cases XVI. and XVII.) relates that a lady, aged 23, became delirious through mental distress, Aug. 4th, 1825. She died on the 8th. Throughout these four days she exhibited most violent symptoms of incoherence; incessant talking, screaming, singing, &c., intermixed with lucid intervals. The only morbid appearances were a highly vascular pia mater, with red points in the substance of the brain. He gives another case of a gentleman, who, throughout four days, exhibited great excitement and watchfulness; and the only morbid appearance was a very vascular pia mater, and slight serous effusion. In neither of these cases could genuine inflammation be proved.

At the same time we must not think it necessary to make little account of this vascular condition of the pia mater; for the commencement of the inflammatory process, and the congestion of a large quantity of blood in the meninges, is quite sufficient to cause most violent symptoms of mania. What Mr. Solly says, page 369, on this subject is very interesting, which is to the effect, that the first result of increased vascularity on the grey matter is to excite to an unnatural degree the same power that we believe to reside in it in a normal state; whereas, if the process goes on to any greater extent, it annihilates this power altogether. Thus the first stages of the inflammatory process on the surface of the brain will cause great mental excitement; while, if the inflammation proceeds, it destroys the intellect. Moreover, what the same author insists upon with great clearness, is also to be borne in mind, namely, that it is to increased vascularity, inflammatory action, and its results in the meninges and on the surface, or cortical substance of the brain, that we are particularly to ascribe mental excitement and mental paralysis; but that much havoc may go on in the medullary portion without causing mental disease. Thus injection

of the pia mater may appear to be a trifling matter, and a large abscess in the central parts of the hemispheres very important, to the unreflecting observer; and yet, as far as mental acts are concerned, the former is all-important, while the latter may be of little concern; since the latter would affect rather the motor powers.

The great discrepancy, however, between the symptoms during life and the observations after death is a matter of common remark among authors. Thus Otto (page 365), says:—In no instance do we find greater difficulty than in the brain in making the results of dissection agree with the phenomena of disease previously exhibited. And again, Bouillaud says (Dict. de Méd. et de Clin. Prat. p. 27, tome 7me), that much more research is required before we can decide on the pathognomonical symptoms which correspond to lesions of different parts of the brain.

On the nature of ramollissement.—There is one subject, however, of great interest, while dwelling upon the relation of inflammatory action to genuine insanity, which I must not omit to mention, and that is, softening of the brain, or ramollissement. This condition is often found in certain forms of insanity, particularly in those cases which are subject to paralysis; and this, at first sight, would seem to indicate that inflammatory action of a chronic nature at least must have existed; but authors are much divided upon this subject, for while some look upon it as the genuine result of inflammation, others esteem it as the result of want of nutrition, and akin more to gangrena senilis than inflammation. Thus Lallemand believes it to be the result of inflammation, while Andral deems this point as by no means decided. Dr. Abercrombie (op. cit. page 24) says, that he used to believe this softening to be always consequent upon inflammation; but since he has read the observations of M. Rostan and other French pathologists, he thinks it very probable that there are two different sorts of softening, one of the inflammatory, and the other of the anæmic nature; the latter

occurring particularly in old people, and on the surface of the brain, while the former occurs in more vigorous subjects, and in the interior of the brain.

Dr. Watson has given us some very interesting remarks on this subject; he fully recognises these two sources of softening, and gives us many marks by which to decide how the softening was caused. Thus, if there be pus mixed with the softened brain, it is a sure sign of inflammation having existed;—again, if we find any obstruction in the arteries, we may look on the softening as the result of starvation of the brain, to use his own graphic expression;—again, great vascularity of the brain, round and beyond the softened part, indicates the former; while, if the softening extends beyond the redness, we may believe the latter indicated. He also agrees with Abercrombie in thinking that the age of the individual is to decide very much the cause of softening. The French pathologists have laid it down as a rule, that the first indication of softening is a permanent contraction of the flexor muscles, and then afterwards an utter paralysis and relaxation; and it certainly is very interesting to observe these conditions in the paralytic insane. But here again, as in uncomplicated insanity, the greatest difference may exist, in different cases, between the symptoms and the necroscopy: thus, extensive destruction of the cerebral substance may occur with little if any of these symptoms, and a most partial softening with excessive symptoms. When we witness these changes, however, we have good reason to believe that the rigidity which occurs at first, is coincident with inflammatory action, whenever inflammatory action exists,—while the after relaxation is the intimation of the work of destruction being over.

Chronic inflammation is probably the cause of general paralysis in the insane.—What the condition of the brain in general paralysis is, has been a question of most laborious research among pathologists, and the opposite conclusions to which

the most learned and inquiring minds have come is rather amusing, though very unsatisfactory. At Bethlehem Hospital we labour under the disadvantage of seeing but few examinations of the brain of those who have suffered from general paralysis; for owing to the inveterate and incurable nature of insanity combined with general paralysis, this complication is not admitted within the walls of the hospital; since the hospital is especially intended for curable cases; and no case is allowed to remain beyond one year in the hospital, except those few selected cases which are received into the incurable wards. Therefore, except an occasional case from the incurable wards, we see nothing of such cases.

Dr. Hitchman (of Hanwell County Lunatic Asylum,) has recently published, in his Lectures which have appeared in the Psychological Journal, some very instructive remarks on this question. He tells us that Bayle, who wrote in 1822, ascribes this affection to chronic meningitis; and in this opinion Rodriguez of Montpellier, who writes in 1847, very much agrees. Rodriguez is of opinion that the arachnoid membrane, under the influence of chronic inflammation, pours forth a large quantity of serum around the parts at the base of the brain and spinal marrow, and that this, by compression, causes paralysis: he supports his opinion by the result of fifty cases given by Bayle, where chronic meningitis was found to accompany general paralysis. On the other hand, others, who have examined the bodies of the insane most extensively, say that they never knew a healthy arachnoid in those who have been insane two or three years: thus Dr. Hitchman says that he has seen thickened membranes in 200 cases where there was no general paralysis. We cannot, therefore, believe that chronic meningitis always occasions general paralysis. But I do not see that this is a sufficient reason why an excessive degree of this affection, and a consequent inordinate serous effusion, should not occasionally cause it. I can, however, hardly believe that meningitis,

which includes the pia mater, can exist for any time without including the cerebral substance itself. Inflammation of the dura mater, both idiopathic and secondary, does exist (and particularly the latter), without spreading beyond the serous sac of the arachnoid; but it is almost impossible to believe that the pia mater itself could take on inflammatory action without involving the cortical substance of the brain.

Considering the light which has been recently thrown on the physiology of the brain, I should be rather inclined to agree with the conclusions of those pathologists who, having found alterations of structure in the medullary portion of the brain, have looked to these alterations as the causes of general paralysis. Thus M. Foville believes this affection to arise from adhesion and hardness among the separate planes of the medullary fibres; and the same author thinks that the reason why some forms of paralysis are irrecoverable, while others are recoverable, is that in the latter case an effusion has caused only compression of the fibres, while in the former it has caused rupture of the fibres. In this opinion Ollivier coincides (vide Dr. Spillan's translation of Andral's Clinique, p. 131). So far, however, there is no necessary discordance between the idea of Bayle and Rodriguez on the one side, and Foville on the other, that, in both cases, compression of the medullary fibres may be imagined as the source of this form of paralysis; whether the compression arise in the external serous sac, or interstitially between the fibres as Foville imagines.

Some authors dwell much on the softened condition of the medullary portion of the paralytic brain, while others speak of its hardened and toughened condition. But these two extremes may of course be looked upon as only different stages of the results of chronic inflammation. And it is most probable that the softening is the result of a previous hardening: in other words, that an effusion, the result of chronic inflammation, takes place among the medullary fibres, causing a general hardening of its substance; that in time this absorbs, and leaves

the brain in an atrophied condition; the effusion itself, having interrupted proper nutrition, would cause its softened state. Many authors, however, believe that induration is subsequent to softening.

M. Calmeil looks upon this affection as the result of chronic inflammation in the cineritious neurine of the hemispheres; but the opinion of this learned author is opposed to the fact, that the entire cortical substance of the brain is frequently in a state resembling pulp, without any symptom of general paralysis having been manifested during life; therefore, should paralysis always depend upon this state of the grey matter, it cannot be thought that this condition of the grey matter always produces paralysis. It certainly seems to be the most reasonable supposition, that intellectual defects should arise from morbid alterations in the grey matter of the brain, and that all those additional defects, exhibited in that class who suffer from this complication of disease in their motor powers, should arise from morbid alterations in the medullary fibres. On this supposition, it would seem, that in cases where paralysis supervenes upon insanity, the disease, which commenced in the grey matter, had spread to the medullary fibres: and the fact of this complication of the whole brain in disease may very well account for the irremediable nature of lunacy combined with paralysis. For we may readily suppose that, as long as inflammatory action confined its ravages to the surfaces, viz. the meninges and the cineritious neurine, and did not extend to the parts beneath, there would be a much better chance of escape from a permanent structural lesion than where the contrary is the case.

To conclude these remarks on the necroscopy of the insane, let me say that M. Georget draws our attention to the fact, that the two sides of the cranium in the insane are frequently dissimilar in size and proportions, the right side generally exhibiting larger prominences than the left. He also remarks, that the skull is often thickened and

hardened like ivory; while, on the other hand, some are very light.

Nothing, however, should make us less positive as regards the interpretation we may feel inclined to place upon any of these changes, than the remarks of M. Esquirol upon the necroscopy of the insane. He tells us that thirty years ago he could have written upon the pathological causes of insanity, but that now he would not attempt a task so difficult, since his experience in the results of the examination of the bodies of mad people has been so uncertain and contradictory. He attributes many of the phenomena revealed by post-mortem examinations to adventitious disorders, to which the insane are prone equally with the sane; to the epiphenomena which precede death, &c. &c. He says that it is certain that many maniacs exhibit no symptoms of disordered organization; and in this he agrees with M. Lelut, who has given us cases of dementia with paralysis, with no accompanying abnormal condition of the brain; and with Dr. Burrows, senior, who out of a very large number of cases found disease to exist in but a small proportion of them. M. Esquirol begs us to remember the lucid intervals of the insane, and to reflect upon the inconsistency of this symptom with a permanent structural alteration of any important amount.* But while Esquirol charges us to weigh accurately our conclusions, and not to mistake the morbid appearances, which have no specific connection with insanity, for the peculiarities of the insane brain, he tells us that recent researches have induced him to hope for more positive, clear, and satisfactory notions on these matters.

* This last argument is not, however, so opposed to the anatomist's views as may at first sight appear, since we can easily imagine lucid intervals to be consistent with diseases depending on structural lesion; for, to use Dr. Watson's words on this matter (page 355), "It seems probable, or not improbable, that in such cases as these, and in many others, the permanent morbid condition is a predisposing cause only of the occasional symptoms, rendering the diseased organ more sensible to variations in the circulation — to accidental circumstances which determine an undue amount of compressing force, or a deficient amount."

Summary on the relation of inflammatory action to insane phenomena.—From all that has been said, we may believe that the brain in insanity may be frequently subject to a low condition of inflammation. But the point of greatest importance is to give this inflammatory action its right position. Now to say that insanity and inflammatory action in the brain hold the relative positions of consequence and ultimate cause, would be absurd and dangerous. It would be absurd, because many cases exhibit no symptoms of inflammatory action at all: so far from there being any febrile symptom present, they exhibit either a state of unimpaired bodily health, or of such bodily health as we can attribute to anything but the febrile state. It would be absurd, again, because inflammation of the brain and its accompanying delirium is an affection to which all are prone, provided the exciting cause be sufficient; whereas insanity is certainly a specific disease, affecting only certain constitutions. It would be dangerous to say this if it led us to antiphlogistic treatment, as has been already shown; for be the inflammation acute or chronic, active or passive, it will not stand this mode of treatment,—while the patient flourishes generally under the contrary treatment.

But suppose, for argument sake, that all insane cases exhibited inflammatory symptoms,—suppose antiphlogistic treatment answered as well in insanity as in ordinary inflammation of the brain,—it would still be absurd and impossible to say that insanity had no further origin than ordinary inflammation of the brain, as long as its specific and hereditary character is recognised. And as we cannot but acknowledge a specific and constitutional character to insanity, it becomes us to look for a specific and constitutional cause; and *this* is the express object of these remarks; but *this*—a mere tendency to ordinary inflammatory action—can, in my opinion, never be. *Inflammatory action in the brain seems to bear only the position of an incident in relation to the cause of insanity, and not that of an essential part of the disease:* a very happy incident, (as I have already suggested), as we may look upon it as a sign on

the part of nature of reaction and repair, but an incident more connected with the principle of repair than with the ultimate causation of disease.

The only position which inflammatory action could hold in the question of causes is, that it is a proximate cause in some cases: that is, that delirium does not arise in the predisposed brain until it is subjected to this deleterious influence. And when we clearly ascertain this to be the case, we cannot overrate the importance of its existence; for our chief indication of treatment is but too often to operate upon the proximate causes of a disease; and should we be able but to place the patient in the same position he was in before the proximate cause arose, we not only restore the suspended function, however feeble its tenure of existence may be, but we generally place the patient in the best position for the operation of those slower agencies by which a predisposing diathesis may be finally overcome. This is but following the course which we pursue in other diseases arising from congenital defect.

On the relation that deteriorated blood may bear to insanity.—Independently of determinations, congestions, inflammatory action, and the whole question of increased quantity and stagnation of blood, the quality of the blood even when circulating freely is a most important consideration in judging of mental phenomena; for situated as the brain, as well as every organ of the body, is, its good or bad effects operate in diverse ways. First, the blood is the great and only pabulum for the formation of that fresh brain substance which is required hourly for the replacement of those particles of effete brain which the principle of death residing within us is causing continually to be carried away. Secondly, arterial blood is the essential stimulant to nervous action; and in proportion as it does not come freely into contact with nervous substance, do nervous functions cease. Deteriorated blood may

thus cause injury to nervous structure and function in two distinctly different ways at least; namely, it may prevent the process of the formation of healthy brain tissue; or, even if the brain tissue be rightly formed, it may not stimulate it to proper action.

Now, as regards the former of these considerations, without entering at any length into the abstruse subject of assimilation and nutrition, we may say that the formation of proper tissue depends on two essential circumstances: first, that the nervous model or germ should be perfect; secondly, that the blood which supplies the nerve-model with the means of its sustenance should contain the ingredients necessary for its selecting power, and that in such a state of freedom and solution, &c. as may bring the ingredients within the reach and apprehension of the nerve-model. For though we have every reason to believe that the nerve-model retains an undeviating power as long as it exists; and that, if the circumstances in which it was placed only gave it the opportunity, it would certainly assimilate to itself proper materials, and in the right manner; we cannot believe that it can effect normal tissue when the proper ingredients are not presented to it; and consequently we must believe that, be the nerve-model ever so perfect, deteriorated blood must have an effect on its operations.

And as regards the latter consideration, as I said above, the due formation of brain tissue is not the only vital question which depends most essentially upon healthy blood; for the structure may be most healthy, and yet not act rightly from the absence of its proper *stimulus* to action, namely, healthy blood. Upon this head we know that venous blood is deleterious to healthy action, and that the least thing which causes it to stagnate, or not pass with sufficient rapidity through the circulatory apparatus of the brain, and thus give place to arterial blood, will in proportion render mental phenomena defective. The supposition, then, that the blood in the brain of the insane is too venous, and not sufficiently arterial, is one which has naturally

arisen as sufficient to account for insanity; and the next hypothesis is, that the presence of those ingredients of the blood in excess, which make venous blood to differ from arterial, very probably occasion those symptoms. The question which has arisen at this point is, *what are* those elements in venous blood which cause it to have the stupifying effect which arterial blood has not; and what is it, in arterial blood, which gives it the active property of a stimulant? A little investigation of the comparative results of the analysis of venous and arterial blood,—of the various excretions which are given off while venous blood is becoming arterial,—as well as of the results of the introduction of any one of the three elementary substances, hydrogen, nitrogen, or carbon, in excess into the blood,—convinces medical chemists that it is the excess of one or more of these elements in the blood which produces that deterioration which venous blood is known to possess; and that it is the presence of oxygen in greater excess in arterial than in venous blood which causes it to acquire its vitalizing characters.

The consideration of the quality of the blood in these two aspects is most interesting. *But what do we know of the changes which take place in the blood of the insane which will account for such mental phenomena?* Upon this head I fear but very little is known. In fact, the pathological alterations in the blood is a subject which deserves very much more attention than it has hitherto received. The only experiments of any importance with which I am acquainted are those recorded by M. Andral; but these chiefly refer to the state of the blood in ordinary inflammation, low fever, chlorosis, plethora, anæmia; and they refer to the relative proportion of fibrine and red globules, which are very interesting, but do not bear *specifically* upon the point in question.

Dr Burnett's theory.—Dr. Burnett has recently published an interesting work, in which he declares his belief that the combination of carbon and phosphorus, in due proportions, is

necessary for the formation of healthy brain tissue, and that insanity very probably arises, in many cases, from a redundance of carbon in the blood, which, by its presence, prevents the proper union of phosphorus with the fatty matter of the brain. He strengthens this belief by the torpid condition of the skin, which is a principal means of carrying off effete carbon. As, however, I fear I may not do his work justice by quotations, I will refer my reader to it for information; it is entitled "Insanity tested by Science," &c.

But I will not hesitate to refer to one or two suggestions from his work, which struck me as peculiarly deserving of attention, and which bear very strikingly upon the effects of the non-elaboration of phosphorus in a proper manner, and the redundance of carbon in the blood.

First, as regards the non-elaboration of phosphorus. It is certainly very interesting to observe that the urine of the insane is frequently loaded with the phosphatic salts;* for it would seem that, owing to this circumstance, *that* phosphorus which should go to the formation of healthy tissue is carried off among the excretions of the body. Moreover, *this* contrast is most striking and worthy of observation, namely, that in those two strikingly opposite subjects of mental phenomena,—the cretin and the ricketty subject,—the former, who is remarkably deficient in sensibility and mental power, passes large quantities of phosphorus by the urine; while the latter, who is known to be generally so precocious in intellect, is also well known to be subject to a disease which, by preventing the due assimilation of phosphorus in the osseous system (one of its most important channels), causes the phosphorus to be thrown back into the vital current again, to be assimilated by any tissue that is prone to assimilate it. Now nervous matter is remarkably greedy of phosphorus, and most probably does, under the circumstances referred to, assimilate it to an excessive degree. So much for the non-assimilation of phosphorus.

* Vide Drs. Sutherland and Rigby's Reports, Medical Gazette, June 1845.

Secondly, as regards the effect of the deleterious influence of carbon in excess, we need only refer to what takes place when the venous blood is not sufficiently purified of its redundance of carbon. We know that the lungs are the chief means for carrying off this element, after it has performed its great duties to the animal frame of replenishing it with food, and (by its combustion with oxygen) maintaining the animal heat. But should the lungs be in such a situation that they cannot be the instrument of passing off carbonic acid gas, and of inspiring pure oxygen, what happens then. The individual so circumstanced first becomes delirious, then comatose, and ultimately dies; he passes through these three stages, as through three stages of deficient nervous and vital power. This is shewn in the case when the individual is placed in an atmosphere already saturated with carbonic acid gas, and deprived of oxygen. It is this circumstance that alone is sufficient to account for the dreadful delirium, and the agonised death, of thousands of slaves in the middle passage; and as an instance which, by its associations, is brought still nearer home to ourselves, and which I have already referred to, this was the cause of the delirium and death of those locked up in the Black Hole of Calcutta. But for these and other such reflections I need only refer again to Dr. Burnett's interesting work.

Now, so far as these and similar reflections on the probable condition of the blood in the insane, only amount to this, namely,—that *owing to a constitutional loss of vital power*, the blood is not sufficiently arterialised, becomes saturated with carbon, and is thence defieient in the due admixture of carbon and phosphorus;—so far as they will allow these conditions to be adjuvants and not essentials of insanity,—and allow the essential source of disease to be a local exhaustibility of the brain itself, I fully accede to the view. This view of the loss of vital power is the groundwork of my theory, as I have already shown. And I shall show still more as I proceed, that while I believe a local loss of vitality in the brain is the only essential part of the dis-

ease, I believe a more general loss of physical vital power to be a constant concomitant of insanity.

But if, on the other hand, Dr. Burnett's theory does not allow of any such peculiarity or infirmity in the cerebral nervous matter as causes it to be the first organ, and very often the only organ, to succumb to a depressed vitality; if it means that all nervous matter, spinal as well as cerebral, yields up its power in the insane diathesis; if it does not, in short, view the *cerebral* loss of power as the only *essential* part of the causation, and the *general* loss of power as only the *incidental and auxiliary*, I cannot agree to it, because I know that sometimes insane persons have very good general health.

For the fact of insanity being ever accompanied with good general health I think invalidates the idea that the essential of the disease is in the blood; for the blood is the pabulum and stimulant of every organ—the lungs, the liver, and the kidneys—as much as the brain; and how can these act healthily if the blood is thus unhealthy? But suppose we reduce the question, and say that the condition of the blood above mentioned only incapacitates *nervous* matter, at least the spinal system would suffer equally with the cerebral system; (the nervous matter being of a similar composition and nature); and yet the parts and functions subject to the spinal and sympathetic system do occasionally act healthily in the insane. I think, therefore, it is very difficult, if not impossible, to accept Dr. Burnett's theory, if it refuses a peculiar infirmity to the brain as the *essential* feature of the disease, unless we are willing and prepared to state that the physical system of all insane persons suffers equally with their sensorial functions.

The highest ground that I could give Dr. Burnett's theory on the blood would be that which we give to the condition of the blood in phthisis pulmonalis; and that is giving it a very high position, and more than the facts of the case would justify; for in the latter case we have positive proof of the existence of deterioration by the tubercular matter produced, while in Dr.

Burnett's case we have only a theory. We grant, in the case of phthisis, that the blood is so far contaminated as to offer an infirm organ the means of forming unhealthy tissue, and becoming the receptacle of abnormal products; but we must also grant that it is owing to the natural infirmity of the lungs,—that they are the first organ, and often the only organ, to appreciate and respond to this bad condition of the blood.

In one word, I believe a deteriorated condition of the blood may be an exciting cause, and the auxiliary of that state of the brain which I believe to be the source of insanity; but I believe such a state of the brain could be and is produced without any appreciable deterioration of the blood; namely, by its own inherent incapacity to continue the vital processes necessary, in their full vigour.

On the relation that the blood, viewed as a means of mechanical pressure, may bear to insanity.—Before I conclude this sketch of the relation the vascular state may bear to insanity, I must briefly touch upon the third head which I marked out for consideration at the commencement of this section of my subject; namely, the blood viewed apart from its vital agency, as a means of mechanically affecting the cerebral powers by too great or too little pressure. We know that any thing which mechanically compresses nervous matter affects its functions; that a due amount of pressure will insure proper action, but that either too much or too little pressure will insure abnormal action. In this way the relation of the vascular system to the brain is a most important consideration. This subject has been much obscured and tortured by a false notion which pathologists had arrived at; which was, I believe, first put forward by Monro secundus, of Edinburgh, and has since been dilated upon by Dr. Kellie; but the ghost of which has, to my mind, been laid by Dr. George Burrows. The theory was, that the brain, owing to the peculiar shape of the skull, could

neither be gorged with blood nor drained ; that it must always be compressed by the same quantity of blood. This doctrine was founded on that law of atmospheric pressure which causes beer not to flow from a sound barrel when the tap is removed, unless a hole is opened at the other end of the barrel. But the truth is, that the laws of atmospheric pressure, which effect this in the beer barrel, do not operate in the case of the skull and its contents ; since the construction of the skull, with its many foramina, causes it to be in a different position from the barrel. This fact was settled by Dr. Burrows' very interesting experiments on rabbits, by which it was proved that (proper precautions being taken against the laws of gravitation) the rabbit which died from strangulation had a gorged brain, while the rabbit which was bled to death had a most anæmic brain ; and again, the brain of a rabbit that was allowed to die with its head dependent was gorged, while a rabbit, killed by the same agent, (namely, prussic acid,) which was allowed to die with its tail dependent, had an anæmic brain ;—but, for a detail of these interesting matters, I must beg to refer to Dr. Burrows' work on the Cerebral Circulation. I have, however, nothing more to say on the congested or anæmic state of the brain in the insane than I have already pointed out under the heads of inflammatory action and deterioration of blood. It has been seen that congestions continually exist in the brain of the insane ; and that, in certain cases, a starved condition of the brain may be supposed. But I do not imagine that there is any ground to believe that insane phenomena ever arise from such a degree of congestion, on the one hand, as would deprive the cerebrum of its powers, simply by its mechanical influence ; or that this state accrues from a want of proper pressure, on the other hand. As regards the first, even if simple congestion without extravasation could produce this state of things, the examinations of the brain of the insane convey to us no such probability. As regards the latter, we know that whatever losses the contents of the cranium may sustain, in the volume

of its blood or its tissues, is replaced by serum; and that an anæmic or atrophied brain receives a compensating amount of pressure from serous effusion. So that all that I purpose to myself, by this allusion to the blood as a means of simple mechanical pressure, is to make this sketch of the relationship between the vascular and nervous systems as complete as I can.

To sum up the conclusions arrived at in this investigation of the relation the state of the vascular system bears to insanity, I will say—

1. That if inflammatory action or simple deterioration of the blood exists in insanity, they are each of them corroborative of the idea that insanity is a disease of infirm nervous and vital power.

2. But that neither of them are sufficient to account for the origin of insanity, and that the origin of the disease is to be sought for in the brain itself.

SECTION II.

The state of the physical condition generally corroborates the theory of nervous and vital depression in insanity. —But if there is one thing more than another which corroborates the idea that insanity is a disease of nervous and vital depression, it is the depressed condition exhibited in those parts of the system which, however they may be subject to the influence of consciousness, are yet essentially independent of it, and are dependent upon organic nervous energy, inherent irritability, affinity, or some other such unconscious influence, for their vital conditions and changes: I allude to the superficial secreting and excreting surfaces of the skin, mucous linings, and appendages. With regard to the condition of the primæ viæ I need say but little; for every one is so well aware of the vitiated condition of the alimentary canal in insanity, that it has long formed one of the most prominent points of observation;

its want of tone and healthy vigour being manifested by costiveness, diarrhœa, or some other abnormal symptoms. Some authors, indeed, and I particularly allude to the father of mental pathology, Pinel, have been so impressed with these symptoms in the insane, as to come to the conclusion that insanity always arose secondarily from disease of the chylopoietic viscera. But without going this length, I will observe, that I am fully impressed with the importance of these symptoms, though, from the motives above alluded to, I shall say but little of them.

The condition of the skin, however, in the insane has not as yet received that attention from pathologists which I think it deserves. I am aware that before I, or any one, could hope to master this subject, we ought to be prepared to speak with some degree of confidence upon the chemical conditions of the various secretions and excretions of the body in the insane, particularly the urine and perspiration; as the ascertaining the exact complementary condition of the various proximate elements of the excretions is essential to a thorough analysis of this question; but I propose on this occasion only to allude to facts which have come under my general observation.

The condition of the skin is peculiar and striking, both in the acute and chronic stages of insanity.

In acute insanity it is frequently such as follows: cold and clay-like, of a dusty slate colour, with a greasy appearance; at other times it is harsh and dried up, the brow corrugated, as in low fever; and in both cases it wants the freshness and elasticity of health. At the same time there is a peculiar fœtor arising from the surface, which may be easily distinguished, by those who are accustomed to it, as the odour which is to be expected in the wards of the insane; and which has long been a source of annoyance to myself. The mouth and fauces are parched, and generally covered with sordes;—and these symptoms are exhibited as much in cases where there would appear to be no heat of body or febrile tendency, as in those where this more active condition is exhibited. As the fury of the

mental energies increases so do these symptoms increase, and as the complexion assumes a proper and healthy condition, the mental violence succumbs. These changes are so markedly coincident, that it is impossible to doubt their possessing a clear relationship to each other.

The state of the skin, again, in chronic insanity and imbecility, is well worthy of notice, as manifesting a depressed vitality; for we shall very generally find that the skin has not recovered that pliancy and freshness which indicates healthy vigour, even when the more marked bodily ailments of the acute stages of insanity have entirely remitted. The skin of the chronic insane has not, very often, that cadaverous and very stagnant appearance which I have noted above; except, indeed, when paroxysms of unusual intensity occur. But even in these more quiescent states the skin generally feels hard and soapy, and if you look at the cuticle you may often perceive it to be cracked and horny. The complexion of persons who have been long insane very seldom retains the beauty and freshness of health; it is often of a dull sallow colour, and much mottled and inclined to break out in pimples; the perspiratory ducts increase, and give a peculiar appearance of coarseness to the skin; the extremities very frequently are cold, and of a purple colour, and indicate much depression in the system.

Now whether it has been proved satisfactorily or not, that the mental phenomena of insanity are the results of nervous and vital torpor in the brain, at least we must acknowledge that the above condition of the secreting surfaces declares pretty plainly that the organic functions are generally carried on very lamely. In order to illustrate and substantiate the conclusions here asserted, I will give a few cases which have come recently under my notice.

A gentleman, whom I see very frequently, exhibits a most remarkable condition of body and mind. For weeks he will stand like a statue, with his mouth and eyes convulsively closed, his hands clenched and of a blue colour, his face covered with a greasy moisture, and his muscles often rigid, though evidently

kept so by the will. He offers to the observer a picture somewhat resembling catalepsy, though the symptoms are really of a different nature, as it is quite evident that there is no involuntary contraction of the muscles. The breath of this gentleman was terribly offensive, so much so that it was very unpleasant to approach him. He would collect large quantities of saliva in his mouth, during a period of some hours; but so resolute was he in keeping his mouth closed, that, not—until an internal impulse (of a nature I could not interpret,) caused him to open his eyes, unclench his hands, and rush about the grounds in circles,—would he open his mouth and let out the saliva, which was collected in large quantities. All this time he obstinately refused his food, and so resolutely, that we had difficulty in preserving his life by administering the stomach pump twice daily for weeks together. Suddenly one day, after a long period of intense silence, this gentleman began talking to me in a rational manner, and at the same time I particularly noticed that his breath had become sweet again, his inclination for food returned, and his skin lost the cadaverous hue it had assumed. He is still, however, I grieve to say, subject to relapses, with only occasional glimpses of a reasonable state; and, when these glimpes do occur, his mind appears to be so little really impaired that he talks very well and intelligently. Such symptoms as those given above, however strange they may sound, are by no means rare in large asylums for the insane; for you may see one person standing in such a condition, another kneeling, and perhaps a third trying to walk upon his knees. It is a condition generally conveying the idea of wretched prostration; and what I particularly wish to allude to is the prostrate condition of the vital powers. Besides the blueness of the extremities and the cadaverous appearance of the skin generally, this gentleman's bowels were very costive; and I have no doubt that the obstinate resistance to food, the obstinate resistance to swallowing even the saliva, and the offensive breath, indicated a vitiated and torpid state of the abdominal organs.

And let me say here, that I believe the obstinate resistance to food in the insane to depend, far more upon a vitiated condition of the primæ viæ, (which gives rise to such impressions of nausea and disgust as are sufficient to urge a mind which has lost its reasoning and judging faculties to give way to the strongest instinct, viz. abstinence,) than it does upon any *mental* delusion about food of a purely abstract nature. Those who are unaccustomed to consider the wonderful connection between mind and body are wont to be blind to these considerations, and to look on all such resistance to food as arising from purely insane hallucinations of a character utterly groundless and unaccountable. The above case also calls to my mind another point of diagnosis, namely, that the obstinate resistance which patients often evince to speaking or opening their mouths is frequently occasioned by the retention of a large quantity of saliva in their mouths, which they are induced by instinct not to swallow, and feel a disinclination to spit out. And, thus, in some cases I believe that the obstinate silence of patients is in some degree to be accounted for (though indirectly) by this vitiated state of the primæ viæ. The management of the saliva by the insane, the way in which some will churn it and let it pass away like foam from the mouth, some will be constantly spitting, while others will be continually collecting it in the mouth, are matters well worthy of attention, and are, I believe, intimately connected with the torpid condition of the primæ viæ.

I would give a few more instances of the depression of the physical life of the insane. A lady, whom I see constantly, is subject to monthly alternations of what we term paroxysms of insanity, and lucid intervals. During the latter period her complexion is fresh, her eye bright and sparkling, she is of a very cheerful disposition, and though her expression is a little outré and excited, you would say that she appeared to be a healthy and happy person. As the month approaches for her illness, all this vanishes. The fetor of her breath becomes unbearable, her complexion becomes harsh, and has a dry friable appearance,

her eye becomes dim and heavy, and she can only rock herself backwards and forwards, giving expression to sensations of uneasiness, though no decided pain is complained of; and when at the worst, she breaks out into delusions, but not till then. During the more healthy period her mind is in a weak and excitable condition, generally very full of hope and wishing for childish objects of excitement; but during the commencement and breaking out of the paroxysms her mind is under a thick cloud, and she is constantly bemoaning her fate; but only when her bodily symptoms are at the worst, does she give wsy to actual hallucinations of mind.

A gentleman, now under my care, is a most violent patient: at times his vociferating and fighting propensities are intolerable; and, though a small man, it requires two much larger men to restrain him from acts of violence. This gentleman's face is pallid, lips white, and his aspect generally enfeebled; he has a remarkably intermitting pulse, the intermissions occurring about every six pulsations. When his appearance improves, his mania decreases. We do all we can to strengthen his system, under the firm belief that anything like antiphlogistic treatment would be his ruin.

But to mention single instances of this sort is almost absurd, as the general type of the insane is such as this. Good diet and strengthening medicine will quiet their furor, while depletory measures increase it. A young lady has just come under my care who is most violent in her conduct, and yet exhibiting some symptoms of great prostration of the physical powers; her skin is just such as that described above; the primæ viæ in the same condition as the first case described; she also is resolutely refusing her food, and I believe from the same instinctive motives. The same lady was under my care a year or two ago, and got quite well; the mode of treatment proposed in the next chapter being that adopted. And she will, I trust, soon get well again. Another young lady has for weeks lately been in a state of almost incessant fury, screaming almost all

day, and trying to injure herself in every way she can; her extremities are of a bluish colour, and her physical powers in a torpid condition. But I will not weary my reader with these egotisms, as I need but refer here to the cases given in the last chapter, which have the advantage of having the successful issue of treatment placed in juxta-position with their symptoms.

On the keenness of emotions, often in depressed vitality.—Our sketch of the consequences of depressed vitality has, so far considered, given an impression that it must produce only painfulness and horror of mind. The night of gloom which pervades the spirit thus situated seems to remind us strongly of that scene in the early ages of the world, when "a deep sleep fell upon Abraham, and, lo! a horror of great darkness fell upon him." The effect on the mind of expiring vital powers reminds us, indeed, of many passages in Holy Scripture, which liken it to a passage through a dim and dreary valley.

But the condition of depressed vitality is by no means always one of pain and horror of mind; on the contrary, it is frequently one of the keennest pleasure. Dreams, as before said, are conditions of mind consequent on depressed vitality; and yet dreams are more often delightful than horrible. Indeed, at times this may be said of insane phenomena; for sometimes we find an insane person evidently enjoying the dim visions of his diseased condition much more than he did the more perfect impressions of health. This latter circumstance is, however, very rare; for—as we must consider the intensity of the visionary state to be owing to its entire dependence on present sensibilities, and to the absence of all the mitigating and moderating influences of reason, judgment, and moral liberty,—so must the presence of the visionary state be pleasurable or terrible in exact proportion as the impressions on the consciousness are pleasant or the contrary. Now dreaming is an incident of health, when the impressions are generally agreeable; but the delirium of insanity is an incident of disease, when the impressions are generally more or less painful.

And I hope it may not be considered as unappertaining to the subject, if I recal to the mind of him who is wont to treasure up the more glowing pictures of his life, the conditions of the body under which the most intense emotions have been enjoyed. If he has been exhausted by fatigue or illness, and has at length fallen into a deep sleep, how unutterably thrilling have been his sensations (should he have been *gradually* restored to consciousness), occasioned by the distant sound of music, or the soft playing of the morning air upon his exhausted frame! how unearthly have those strains appeared to be! how exquisite the gentle breath of nature! And how certainly have these keen sensibilities faded away as full consciousness has returned. Those who have known what it is to have been long ill, whose frames have been oppressed by the employment of remedies to produce sleep, know well the magic effect, on the returning consciousness, of the sacred or poetic words read by a voice familiar and beloved. The sick-bed seems to them changed indeed to a scene of beauty; the night of gloom to radiant morning! How sweet the sounds of the voice! how deeply impressive the sacredness and beauty of the words! This is so great a truth, that many persons would, I believe, willingly go through much exhaustion to enjoy such emotions. Again, how intense sometimes the thoughts are wont to be when one awakes at night, our frame, in conjunction with all nature, at a low state of vitality—how the mind seems to expand and long for scenes, dim, indeed, and visionary, but full of hope!

Should we wake early, and rise at the dim hour of cock-crowing, before the sun has revived the world, how intense the mental sensibility is wont to be! The dimness of nature seems to make us realise a reality and definite existence about our own being, our hopes and destiny, which the more defined scenes of mid-day distract, and will hardly allow us to possess. The mind delights then in itself; the shadowy forms around us become the creatures of our own fancy, and little seems to stand between us and eternity. And when the first silver cloud floats along

in its glowing track, giving colour and more palpable existence to the very air itself, and shining in the horizon as the herald of hope, how keenly the mind pants after something it cannot even express; but which to many minds becomes embodied in the thought of a more glorious rising still, when the eye which has been closed so long shall gaze with its reawakened consciousness upon a scene long imagined, but now for the first time revealed. When the full glowing sun has risen, sensibility has reached its utmost range; and the mid-day sun, the bustle of life, reveal no visions like those of the early dawn,—so little, indeed, that a man can hardly believe himself to be the same being he was.

And as springing out of the same great truth, it would appear that, in this life, in proportion as objects are congregated and elaborated, sensibility decreases; so that, indeed, he who has little, has often more than he who has much. Does not the poet acknowledge this truth when he seeks the monotony of winds and waves to inspire his soul, and flies from the busy scenes of life? Does not the moralist feel this when he tells of the intensity of the love of one, and the deadening effects of many objects? Do not all true lovers feel the force of this truth (whether their love be addressed to things in this world or beyond it), and do they not know that secluded scenes, the witness of those thrilling hours of life, passed either in solitude or affectionate intercourse, will produce sensations of a nature more exquisite than any diversified excitement could ensure; and that the surest way to lose such feelings is even to talk of them much, to associate them with every-day life,—much more, to attempt to find them in the varied scenes of life.

Now all these things have a deep meaning, and seem to point to great truths. Do they not seem to tell us that there is behind the veil of this flesh a land of vision—a region where no effort of mind is required to mitigate or change the full appreciation of what the soul desires?

Those happy hours, so favoured and produced by a depressed

state of vital power, or the monotony and sequestered solitude of surrounding circumstances—those deeply coloured moments of life, when the spirit seems to break away through from ordinary boundaries, and revelation again, as before Adam's fall, seems to hold the place of reason and moral liberty—remind me, both by their beauty and fragile existence, of the scenes and associations offered to the senses when we stand in some dim Gothic building, and gaze through the coloured windows upon the scene of life and light without. The day-light, as seen through the red and yellow lights, and all the fantastic furniture of windows, appears ever a glowing sunset; dreams of beauty and fancy are raised, which vanish instantly when the full light is revealed on leaving those solemn shades; and the least rough handling of these intenser thoughts, like the wind which rattles the crystal casement, remind us instantly how frail and delicate our scenes of beauty are.*

* The consideration of the intense nature of the sensibilities of the half conscious state, and the deadening effect of the full return of reason and moral liberty;—the consideration of the position that the states of trance and vision hold in Holy Writ;—the fallible nature of reasoning and moral liberty, &c. &c.; induce me to think that the attributes of reason and moral liberty are conditions of the mind of a low and peculiarly mundane nature in comparison with the condition of revelation, or simple consciousness of impressions. The mode of action of the mind in the visionary state seems to me to be much more like the modes of action of what we know of the spiritual world, than the modes of action of reason or moral liberty; for the former is a state where no effort is required, and the mind enjoys the things presented to it without that uncertainty which intellectual phenomena presents while the latter is a scene of personal effort and anxious responsibility.

But though reason and moral liberty seem thus mundane in their object and mode of working, they are essential to our present state of imperfection, for they are the means which peculiarly raise man above the present evils which are offered to his consciousness; they are the mitigators of his sorrows, though they may render less intense his pleasures. It is the presence of these qualities which makes man to differ so singularly from the lower animals, who appear, the more they sink in the scale of creation, to be the more helplessly dependent on the circumstances presented to their consciousness, without any power to relieve themselves. These qualities, in short, are the only means by which man is, under

And should these reflections at first sight seem to be merely poetic effusions, and perfectly foreign to the subject in hand, I hope on reconsideration they will not appear so to be; for if they only promote the conviction on the minds of sufferers that we are able to sympathise with their depressed states of mind—that we can feel with and for their condition of deep dependence—do we not by that means strengthen the feeble hopes of many, and especially of convalescents, who, amid the constantly vanishing gleams of returning reason, seek for such moral comfort and sympathy with the most intense anxiety?

I have already alluded to the misery produced by that slight degree of want of certainty in its ordinary means of rest and support, which the mind is sometimes subject to, between sleep and wakefulness late at night, and after much excitement. I have described the anxiety it endures for its own welfare as most intense; and if nothing tends to assure the mind thus tempest-tossed more than the voice of sympathy and kindness, how great must be the relief occasioned by such moral means in a state of convalescence, after weeks or months of a most direful condition. I need hardly say, that few scenes are more

present circumstances, able to hold communion with his Maker, and seem to me to represent that gift of the knowledge of good and evil, which was given to man as a boon by a beneficent Creator when he lost that full revelation of happiness which he had before the fall. And thus, while the simple revelation of happiness is the only condition of unmitigated happiness, and the simple revelation of misery the only unhappy state which has no mitigation, man possesses qualities of a mitigating nature, which are not to be neglected or laid aside. But the practical bearing of these remarks consists in the circumstance that it is, in my judgment, a dim appreciation of these eternal truths which drives persons of an imaginative and sensitive turn of mind to think themselves to be the subjects of peculiar revelation; and it is quite as well that we should understand that their infirmity and folly consists not in the desire for, and the appreciation of such a state, but in imagining that they have arrived at it before they have any solid or real testimony that this is the case. The person who acts in this way, so far from being in advance of his brethren, is really in a state of deficient mental power; because he is really in the circumstances requiring the mental efforts above alluded to, he seeks to do without them, and fails altogether; he is, in short, like a man who cries "'peace, peace,' when there is no peace."

distressing than the powerful intellect wholly prostrate, and the affectionate mind lost amid the terrors and phantasies of full developed madness. Few scenes are more deeply affecting and anxious than those where health is struggling with disease—when the victory is uncertain—when the patient begins to have a consciousness of the conflict, and for moments enjoys with deep anxiety a gleam of health; while he sees the cloud approaching again which is to hide its brightness. But, on the other hand, few scenes are more delightful, than to witness the full restoration of such a mind, to all that we had esteemed or admired before; especially when we have the consolation of being allowed to feel, that we have been instrumental in such a work.

I am well aware, however, that these remarks will only apply to a certain number of cases among the insane, and to them only at certain stages; for many insane people are peculiarly deficient in sensibility. And when the disease exists in its full intensity, sympathy is as useless as any other moral means. But I am speaking of convalescents chiefly, and such patients as possess refined minds and sensibilities; though even towards them such a course would at times be injurious rather than advantageous. But I know well from experience the value of such means on certain occasions, though I would not unnecessarily and wantonly lay bare the secrets of others' hearts by sketching from among the many scenes I have witnessed of this nature.

The female sex being particularly prone to insanity, corroborates the theory.—Before I conclude the discussion of the probability that insanity arises ultimately from a constitutional want of vital power in the sensorium, I will allude to an interesting circumstance which bears significantly on the subject: I refer to the influence of sex in insanity. We know that the nervous and vital powers of the female sex have a less capacity to endure without flinching the physical and moral vicissitudes of life, than those of the male; though, on the other

hand, women have a far greater power of resiliency than men. To use the old metaphor, the one sex will bend to the storm, while the other may break but cannot bend. But in few cases is this more manifest than in the influence insanity has upon the sexes. The following statistics will shew that women go mad much more frequently than men; that they recover in a much larger proportion; and that the disease kills them much less than it kills men. I have already alluded to this striking fact when I gave M. Esquirol's experience on general paralysis among the insane. The wards of Bethlehem Hospital shew that, with equal accommodation for the male as for the female sex, with an equal ease of admission, and with equal means of cure, a far greater number of females are received within these walls than of males; while a relatively larger number of males die than of females. During the twenty-nine years ending December 1848, 3979 females were admitted, while only 2657 males were received; that is, nearly fifty per cent. more females than males; or, in simpler terms, where a hundred males are received, one hundred and fifty females are admitted,—that is, three to two. Of those received more than half the females are cured, while less than half of the males recover; that is, 53 per cent. of the females are cured, and only 48 per cent. of the males; while the deaths are in the inverse ratio, more than 5 per cent. of the males die, while only about 4⅓ per cent. of the females die. It appears that the wards of St. Luke's Hospital convey the same intelligence; and thus, from *the best sources* that England can present, namely, metropolitan hospitals for the *cure* of lunatics, these facts are to a certain degree established. Moreover, Esquirol has observed the same state of things in France.

There certainly are many arguments which could be brought to account, from social rather than physiological grounds, for this most interesting circumstance: as, for instance, that the slighter forms of insanity in the male sex may very possibly not appear so much at Bethlehem, as the same degrees of the affec-

tion in the female sex. There are many reasons why this should be the case. There is much greater difficulty in placing men in confinement than women, owing to the greater independence of character which is natural to them, and to the necessity of letting a man go on with his work, when his mind is slightly affected, longer than a woman in the same condition; seeing that his family are dependent upon him for their daily bread. Again, it is very possible that many of the slighter affections of the mind in the female sex are very little more than an extreme degree of those slighter forms of nervous disease (to which we know women to be so much more subject than men, that it is common in the one sex and most uncommon in the other); such as hysteria. And *the same* reasoning will assist in accounting for the circumstance, that while women are more prone to insanity, they recover from its attacks much more easily than men; for as women are subject to much stronger emotions than men, a smaller cause will overwhelm their reasoning powers, and consequently a smaller cause will insure recovery.

There is, however, another reason why females should recover more easily than men, which, however paradoxical* it may appear, is nevertheless supported by the statistics of Bethlehem. It is, that women go mad from *exciting* causes of a *physical* nature more than from those of a *moral* nature; while the converse holds in the case of men: and it is, I believe, acknowledged

* This appears paradoxical, because we know that the main difference between the psychology of woman and man is, that women have a keener sense of emotional influences than men, while they have a less capacity of endurance of mental exertion. The psychology, as well as the structural development of a woman's brain, bear out this truth remarkably; for while (as regards the latter circumstance) we find that the only important distinction between the brain of man and woman is the comparative smallness of the cerebral hemispheres (the parts belonging to emotions and instinct being at least of equal size), we find that her perceptive faculties are more acute, though her capability of sustained mental exertion is much less.

that insanity from a physical exciting cause is more curable than that from moral exciting causes. Thus, during the year 1848, (which is a fair specimen of other years) rather more than half the males became insane from moral causes, while only 81 out of 188 females, received during the year, are in this category. On the other hand, from physical causes, about 25 per cent. of females suffered, and only 20 per cent. of males. Puerperal and other uterine causes assist very much in accounting for this disproportion; and, indeed, would account for a much larger disproportion, was there not the counterbalancing physical cause of drunkenness on the male side. More than half of the physical causes of insanity amongst women is connected with their uterine condition.

SECTION III.

Some general conclusions on prognosis arrived at from the statistics of Bethlehem Hospital.—In the above remarks I have referred to the idea, that females possess a greater power of recovery, or reaction, than men; and this reminds me of an interesting point, which the records I have been studying demonstrated somewhat to my surprise; but which, upon reflection, seems only consistent with what we ought to expect: it is, that insane persons recover in a larger proportion from *second* and *third* attacks than from *first*. I say that this excited my surprise, for it is the common observation, that a second or third attack offers a more unfavourable prognosis than a first attack; and I say it is only what we ought to expect, because the first recovery is an indication to us that the individual has already exhibited a capacity for reaction or recovery, which we cannot, of course, prognosticate in a first attack. From an abstract of four years at Bethlehem Hospital I gather that—

Average per annum.

First attacks are	198,	while the cures are	91,	or below $\frac{1}{2}$
Second attacks	57	„ „	34,	or above $\frac{1}{2}$
Third attacks	22	„ „	15,	or about $\frac{2}{3}$
Fourth attacks	11	„ „	7¼,	or about $\frac{2}{3}$

But, supposing that this proportion conveys a true sample of the proportion of recoveries in the world generally, from first, second, and third attacks, we are not to look upon a second attack as a slight matter; for though we may believe, and take comfort in the reflection, that a constitution which has rallied before may rally again, we must also remember that a constitution which has given an indication of relapsing once, may be subject to continual relapses; and there can be no doubt that continual relapses at length impair all the constitutional powers. Thus, while we may prognosticate favourably in a second attack as regards a capacity to recover, we cannot but feel that the chance of a permanent cure is much removed.

There are a few other points (which belong rather to a general prognosis than the causes of insanity), which have been revealed to me in searching the records of Bethlehem, and which, I hope, may not be deemed out of place in these remarks: they refer to the influence of age—season of the year—civil state, whether single or married—the length of the attacks—bodily health, &c.

The age at which insanity is most prevalent is not exactly the same in both the sexes, though between 20 and 40 is the period the most exposed to the inroads of the affection. In early youth it very rarely appears, indeed; and in old age active and genuine insanity is comparatively rare. In women, the ten years between 20 and 30 is the most liable period; while in men it is a little later, namely, between 30 and 40;—the cessation of the periods is always to be looked upon as a haven of rest to the female sex. Young people may be said to have a better chance of recovery than old, though this refers rather to vigour of constitution than age.

As regards the seasons, I may say that the statistics of Bethlehem Hospital indicate that the hot months present more attacks of insanity than the cold; for during the six summer months there is an increase of about 20 per cent. admissions—that is, as 6 is to 5. It would not be out of place to allude here to a very interesting table contained in the report of the asylum for the County of Lancashire, dated 1848, by Dr. De Vitre and Mr. Gaskell. These gentlemen have made out a table to show the absurdity of continuing any belief in the theory of lunar periods. This table I will here take the liberty to copy, as I think it is sufficiently comprehensive, from the length of time over which its history stretches, as well as the number of cases it comments on, to be esteemed a conclusive evidence in this matter :—

Proportions of paroxysms of excitement, and accessions of epileptic fits, occurring during the periods of the new and full moon, as well as the intervening period, from January 1841 *to August* 1848.

PAROXYSMS OF EXCITEMENT.

	New Moon.	Intervening Period.	Full Moon.	Intervening Period
Men .	3082	3124	3023	3095
Women	3583	2567	2531	2548

OCCURRENCE OF EPILEPTIC FITS.

	New Moon.	Intervening Period.	Full Moon.	Intervening Period.
Men .	6184	6070	6124	6357
Women	4474	4079	4484	4723

The records of the hospital do not speak well for the connubial state; for if it be true that, in the general census, the number of unmarried people is greater than that of married, in society generally, the records show that the converse is the case at Bethlehem, and that a far greater number of married than of unmarried people are received. I am, however, so little acquainted with the census and other matters that require con-

sideration, before a true opinion can be formed on this head, that I only offer this matter to the consideration of others.

As regards the prognosis derivable from the duration of the attacks, it is almost needless to say that the chance of recovery is in the inverse ratio to the protraction of the disease. The continuance of the affection for six weeks or two months need cause no despair on the part of the practitioner; but when it goes on for five or six months, there is much cause for anxiety. If the affection lasted only six weeks or two months, it would be called a favourable case; but even then, it would often be quite as well that the patient should be under care for a longer period. So strongly is this felt at Bethlehem Hospital (which I need hardly say is a charitable institution which bears all the expense of the inmates), that no cases are allowed to leave its walls under three months from their admission. This is, however, a subject of deep and anxious thought to the mental physician at all times, as so many and so great evils exist on either side. Thus, to keep a patient longer than is necessary causes needless irritation and misery, and may occasion a relapse; while to release him too soon continually eventuates in a partial cure, and an early recurrence of the disorder. When a year has passed away without any remission of the disease, it begins to assume a hopeless aspect, though cases do recover after two or three years' continuance of the affection.

The last matter I will touch upon is one which points more particularly to the express object of these remarks, as it indicates that insanity is a disease essentially of a local nature, and declares the absence of much inflammatory or other deleterious physical action of a general nature: it is, that but few of those received into Bethlehem are to be considered as in decidedly bad health. Slight derangements of the chylopoietic viscera are generally perceptible; but not above one in seven appears to be in decidedly bad bodily health. Many are in feeble health, and in such a condition as I have endeavoured to describe; but very few are liable to complaints which at all affect their viability.

CHAPTER IV.

THE PATHOLOGY SUPPORTED BY THE RESULTS OF TREATMENT.

On nervous energy.—On the results of air and exercise.—Cases.—On the results of good diet.—On the results of the due employment of water.—Conclusion.

In saying a few words upon treatment I do not wish to enter upon the subject generally, but to confine myself to it so far as it specifically bears upon the pathology laid down in these remarks. I shall omit, therefore, the whole question of the treatment of individual and incidental symptoms. The bleeding, blistering, and drugging a patient, on the one hand; and moral treatment, on the other, will be only touched upon in an incidental manner.

The theory laid down has been, that insane paroxysms indicate but the culminating point of a constitutional infirmity, namely, a deficient nervous and vital vigour in the sensorium; that the excitement and paralysis of mental phenomena are but different conditions of loss of nervous tone; and that the torpid condition of the body of the insane, generally, corroborates the foregoing theories.

But the above conclusions upon nervous excess and nervous torpor, as the consequences of loss of nervous tone, is based upon the hypothesis that there is such a fluid as we designate nervous energy; and that this nervous energy, when it loses its proper equilibrium, is wont to overwhelm one part of our economy, while it leaves other parts in a minus condition. It is true, we are not able to render this fluid palpable, but all medical men believe in its existence, as well as in its being a

fluid capable of such disturbances of its current as the above ideas indicate. Moreover, it is not a merely fanciful notion to imagine, that these plus and minus conditions of nervous energy are but manifestations of that law which pervades nature when the proper relation between a current and its channel is disturbed. It is by this law that winds arise, and the electrical condition which ends in the thunder-storm is produced; the operation of this law causes the stream which is unequal to its channel to be rugged and violent, and the full current to have the tranquillity of strength. In the present state of science we can but allude to these things as analogies; indeed, they wear but the air of metaphors when speaking of them theoretically, but practice and experience causes us to come to the conclusion that they are not only analogies but resemblances, and are all really parts of one universal law.

Air and exercise.—Suffice it now to say, that the recommendation of air and exercise is based on the supposition that the two following ends are attained by these remedies, namely, 1. The restoration of the lost equilibrium of nervous energies, by carrying off the excess of the current through channels which are in a deficient and inactive state; and 2. The more permanent remedy, of so strengthening the nervous system as to cause the tendency to this loss of equilibrium to cease. Muscular exercise eminently does the former; for the bodily system in the insane being generally in a state of torpor, while the brain is in a state of excitement, the exercise of the muscles and the physical system may be esteemed auxiliary in carrying off the cerebral excess through those channels which have been dried up, but which are now, by compulsory use, reopened;—while fresh air, owing to its tonic influence, is of course the best means to insure the latter.

In short, this course of treatment is, as I have already said, nothing more than, in disease, carrying out a principle through the instrumentality of others, which, in health, Nature herself

dictates, and instinctive impulse compels us to follow. It is the sense of the utility of such a course of proceeding which urges to a vigorous walk after hours of deep thought and muscular inactivity. In health, so strong is the sense of the necessity of such a course, that the associations in connection with this healthy change are among the most delightful that our imaginations dwell upon; but, in disease, the difference of the impressions conveyed to our consciousness by the sense of feebleness, from those conveyed by the sense of vigour, is so great, that such associations become entirely altered, and it is generally necessary to compel that, which instinct naturally suggests.

I cannot draw attention to the beneficial results of the due employment of the great vital stimuli above referred to in a more forcible manner than by citing a few cases which I have recently had under my charge.

Mr. A. was a perfect specimen of my first modification of mania; he hardly suffered at all from actual delusions. He suffered dreadfully from a *sense* of the loss of control over his thoughts; he talked most rapidly and incessantly, but never incoherently; his grand object was to try to impress upon others, in every way he could, what he was feeling,—evidently with the desire of obtaining relief by his explanation, and of unburthening the weight of anxiety upon his mind. When I was not present he was continually writing his thoughts down. His mode of writing was just like his mode of talking; it was markedly under the influence of great agitation,—his letters ill formed and blotted, so that they were illegible,—though they did not appear (as far as I could understand them) either incoherent or as if he did not fully recognise the facts of the world around him. In truth, he recognised the facts about him too sensitively, and was most violently agitated about circumstances which, in better health, he would certainly have seen the necessity of caring for, but not to the degree he did when ill. This gentleman was a man of most refined mind and cultivated un-

derstanding; he had read and thought much and deeply upon medical matters. The knowledge which he had acquired in this way rather added than the contrary to his anxieties and sensibility, as he was constantly trying to apply his feelings to different cerebral conditions on phrenological data. The topics which chiefly burthened his mind, when not dwelling in the abstract on his own mental phenomena, were points of real importance, though their importance was viewed in a magnified manner. His position in the city he lived in rendered his presence and his health of importance to others as well as himself, and he was very restless upon these matters. I only remember that once while he was under my care he actually succumbed to delusions, and this was at night, when he besought his attendant to take the poker and defend him from some unknown enemies. On previous occasions, indeed, and before he came to me, he thought the keeper (whom I had sent to him to the country, at the request of his then medical attendant) was a gigantic being that intended him bodily injury, and whom he thought it right to propitiate by submission. These delusions, however, were so grounded in truth, that they could not be called incoherent hallucinations: in the first place, as regards attack upon his person, he had been subject to this, from having been necessarily placed under restraint; and, in the second place, as regarded the size and position of his keeper, he was not far wrong, for the man was of large build, and much bigger than himself; and it was very true that the best way for him to propitiate the non-interference of this keeper was submission. The man was, however, very amiable, and conducted himself very well; and I know that this gentleman's sentiments towards him, as well as towards all connected with his restraint, are those of unmitigated kindness and gratitude.

As regards the symptoms of organic life, they were in many points markedly such as I have described. The skin was clay-coloured, and suffused with perspiration; head hot; tongue

very foul; bowels very costive; his underjaw was in a sort of tremor, just that sort of tremor so indicative of great nervous and vital depression; sleep disturbed, and often impossible to be obtained.

For his general symptoms of course the usual remedies were employed, namely, sedative draughts at night; and in this case with marked success: they were not opiates, as I have a strong feeling against opium in insanity if it can be avoided, having generally seen that it does more harm than good, by causing stagnation of the functions of the body without procuring sleep, and by insuring evil to the head and stomach: besides, he had tried morphia without success. Local depletion had been employed in his case before he came to me, which only aggravated his symptoms. The condition of the bowels was rectified by mercurials; but the great remedial means of his recovery I believe to have been air and exercise, and proper diet. He was naturally very fond of gardening; and as soon as some of his excessive excitement had passed away, he took to this pursuit with unremitting energy. He spent his whole day nearly in rolling and perfecting garden walks; and by the time these walks were perfect, his mind was perfect also. This was a remarkably interesting case, and one attended with rapid recovery, because of the fact that the patient worked with his medical adviser, and throughout saw the propriety and necessity of following up this course of proceeding. I would that all cases were as amenable as he was, and much greater success would attend our practice; but, like the inconsistencies of this world generally, this gentleman, in fact, contributed much more to his own health than any one else, and yet no one is under a stronger impression that he owes all to his medical advisers and attendants. Others, who will resist every advice and encouragement, will frequently, on recovery, feel but little of that gratitude which he so amply is sensible of. In this case it seemed manifest that while the physical exertion carried off his excited nervous energy into other

channels, the healthy pursuit, carried on in a pleasant garden and with pure air, renovated and restored the integrity of his nervous tone.

I must add before I conclude this case, that before he came to my care he had been confined to his bed and his room by injudicious advice. While under this course of treatment he got worse and worse, and not until the contrary line was adopted did he improve. But what made the case, at this time, worse still, was that he was keenly conscious all the time, that the course being adopted towards him was adverse to his recovery; and yet, owing to his mental condition, his arguments to that effect were not attended to. Oh! that medical men would more often follow the dictates of nature, and the instincts of sensibility, as well as common sense; and would remember that in the incoherent observations of the insane there is often the strong groundwork of truth. When this line of conduct is adopted practitioners will no longer be said to kill more than they cure. I will only add, that this gentleman recovered from his illness in the course of six weeks entirely, and was restored to his family and important position in life, to the great satisfaction of all parties. It is now nearly two years since his illness, and he has had no sort of return of his symptoms,—neither, indeed, is he likely to suffer from a relapse; for in his case there is no hereditary predisposition, and he is so fully impressed with the necessity of husbanding his bodily health, that his nervous system is not (as far as my prognosis can judge) likely to succumb again to this malady. To me his night of pain has been succeeded by a morning of joy, for his case I rank among those few which occur, where the efforts made for a patient's welfare have been fully appreciated by himself. Certainly, if an exact recompense of gratitude was always to be expected from those who recover (which are the great majority of recent cases), much disappointment would often ensue. But it is not to be expected that (except where great comprehensiveness of mind and amiability of disposition exists) any one who interferes

with the liberty of an Englishman, even with the kindest intentions, should meet with any other result.

Mr. B. was sent to me under the following circumstances. He had previously to his confinement injured his leg; this was done, as far as I could gather, during his illness. His mind was in a most despondent condition; he thought himself the victim of some internal disease of a very horrible and loathsome character: this delusion was immoveable while the bodily condition, which I shall now speak of, lasted. His skin was cadaverous, and his general aspect haggard and disconsolate; his tongue very foul; bowels suffering from diarrhœa. His system generally shewed great torpor and want of vitality. He was unfortunately unable to get out of doors on account of his leg; the excessive pain and swelling which ensued on the least attempt at using it being instantly such as to prevent the possibility of the attempt; and as it was the middle of winter, sitting out of doors and being carried about would have been very impolitic measures, and probably would have done more harm than good. I prognosticated that when he could get his leg to the ground and could walk about, he would get better in his mental condition; and this was the case more markedly even than I anticipated. He hardly seemed to improve at all during the weeks of his lameness; but as soon as he was able to use his leg, he commenced walking a good deal;—not (in this case) because he himself thought it would be of any service to him, but because of my earnest request, and on the assurance of what I said to him. The result was that soon after this he was restored, perfectly recovered, to his family.

Mr. G. had been under treatment in the country for a long time. The treatment he received was, to my mind, of a most deleterious nature. He had been confined to his bed, blistered and bled and physicked most unmercifully. This course of proceeding had gone on for some months, and he got worse and

worse. I had sent him an attendant on the request of his medical adviser, at the outset of his illness. This was his fourth or fifth attack. When he came under my care he was immediately dressed and sent out into the grounds, and would remain out of his own accord whether the weather was cold or not. This gentleman had little else done for him; he soon began to recover, and went away in a short time quite restored. He constantly spoke to me of the very injudicious treatment he had received; and though he spoke most kindly of his medical attendant, as of a man esteemed much in his neighbourhood for general practice, he was convinced that he did not understand the treatment of his affection rightly.

As far as I can recollect, in neither of these three cases was there any intermission of progressive recovery after they were once in the full enjoyment of air and exercise. In the first case, certainly, a premature permission to walk out of the grounds did temporary harm.

Varieties of treatment.—I could go on reciting many other cases of a similar nature, but wishing to avoid the character of egotism and tediousness, I will refrain, and will urge rather a few general observations which I have made as regards varieties of results under this treatment. For example, I by no means recommend *excessive* exercise in all cases. The amount of exercise must be determined by the physical and vital powers of the patient; and in debilitated habits I should rather trust to the tonic influence of fresh air, than to the effort to drain off cerebral excitement through the channel of excessive muscular exercise, &c. Some cases appear to acquire vigour of action by hard work, and to be able to endure more exercise after they are "warm in harness" (to use a vulgar expression), than when they first began their exertions. On the other hand, others are so debilitated as to require anxious watching, lest the very sources of life be used up by undue violence of action. The general appearance of the patient, his pulse, his appetite, his previous habits, &c.

&c. must all be taken into consideration; and the idiosyncrasies of constitutional powers cannot be too much studied. It is the same as in ordinary life: thus cold-bathing is life to one, while it is death to another. One man, whose circulating system enjoys a great capacity for reaction, will say that a cold bath early in the morning clears his head, and sets all his bodily functions right for the day; while another will tell you that he does not recover from the debilitating effects of the shock for days afterwards. Youth and vigour can of course stand much more than those periods of life when the vital powers are evidently on the decline. I now have a young lady under my care, who recovered once before under treatment where a great deal of exercise was used, and in whose case the same means seem to be likely to be conducive to great good again. Another young lady now also under my care, and subject to periodical paroxysms of insanity, recovered from the last paroxysm much more quickly than from preceding attacks; and I attributed this more rapid improvement chiefly to air and continued exercise; and I believe she herself would agree in this verdict.

On the other hand, in the case of a gentleman now under my care, though his attack is recent, and very great violence of mental phenomena accompany a torpid state of the body, I am afraid to use any strong measures; as his pulse is intermitting, his symptoms of a paralytic tendency, and his whole condition manifesting an inclination to a general break up of his constitutional powers. He is continually out of doors when the weather will permit, but only walking about or engaged in any little trifling work which attracts his attention. Of course, in all cases where there is a paralytic tendency great care must be taken; as also in those very exsanguine cases which we meet with in puerperal women, &c., where the chief indication of treatment seems to be to procure sleep and foster the strength of the system, keeping the bowels well open in the meanwhile.

In some cases, I need hardly say, the full appliance of these

remedies is not followed by successful results, even where the symptoms most manifestly indicate the propriety of their employment, and the difficulty of putting them in practice is not great. No one who is sincere in his account of his practice could, I presume, say otherwise of any course of treatment. Thus the gentleman (described in the preceding chapter as standing like a statue, with his skin in a torpid condition, bowels costive, but muscular powers unabated), used to devote himself to gardening with much energy at the commencement of his attack; and out of kind regard for my injunctions would pursue these avocations, when his nature prompted him to assume the statue-like condition. We were obliged, certainly, to give up these employments in his case, when he began to refuse his food; so that perhaps the treatment had hardly a full trial. The case of this gentleman is most painful in many respects; for he was a man of great power of mind, and of a most amiable disposition. I have often watched him, while engaged at his work, struggling between his propensities and his better judgment, in a manner to excite the tenderest sympathy. His mind, even after a week or more of complete gloom, when neither a word would proceed from his lips, nor hardly a limb be voluntarily moved, would suddenly seem to recover its powers; and he would begin to talk to me about classical and poetic scenes, in a manner which would be perfectly surprising to any one who had never witnessed such a case. In a moment all was gloom again, and for days he would go on as he was before this short half-hour of mental life.

Difficulties in treatment. — The course of treatment, as described above, seems easy, natural, and requiring little attention; and yet in few cases does the difference between the flowing account in a book, and the difficulty of practising what is so easily described, appear greater. The obstacles are sometimes perfectly insurmountable. Very often the patient is so obstinately resolved to thwart every wish of his medical adviser, that he fairly gains the day in the end.

The genius of perversity is in some not only most resolute, but most enduring. When a man resolutely refuses to move an inch voluntarily, and when he persists in this line of conduct day after day for months (as my sad experience proves), it is almost impossible to expect much from air and exercise. You may drag him about for a short time by superior physical strength; but the insult done to his feelings, the exposures to cold, and the injury to his body, which almost unavoidably must result from such a line of proceeding, obliges us to come to the conclusion that more harm than good is done by persisting in the remedies; more especially when it is often as difficult to get such a patient to his room again as it was to get him out of it. I have known the most absurd instances of such perversity: thus, a cold bath is deemed requisite, and it takes four, and I have known six, men to put the patient, a small man, into the bath; and when he has been once in, nearly as much trouble to get him out again. Difficulties of this nature are particularly cogent when a person is not raving mad, and when his sense of his own dignity is by no means obliterated; for it signifies little, in comparison, what happens to a person who is engrossed in his own vague delusions, and who will forget the next moment what occurred during the preceding moment; but if a man's madness partakes of the nature of monomania, or some form of partial mania—if he is a person evidently of very refined feelings, and accustomed before his illness to regulate all his impulses and propensities by strict decorum and self-respect—if, moreover, by his illness he forgets nothing of his position,—it requires much and anxious care not to injure him rather than the contrary by violent measures; and though much may be done even in such a case by *tact* and gaining his confidence, yet sometimes even this is impossible, and for a time you are compelled to relax your efforts.

Among many others of this sort, I have a gentleman now under my care, in whom I meet with difficulties such as I have mentioned; and as his present attack is the third one, and he has been ill this time nearly a year and a half, I, of course, do

not view remedial means as of such importance as to be employed at all hazards. He is a person of refined sensitive mind, very captious and gentlemanlike (not that these two qualities are necessarily combined, though they too often are); he will not walk out unless compelled; he will, in short, do nothing willingly but smoke. If coercive means were not sometimes used, he would lie in bed all day. Sometimes he will, after much persuasion, and an insinuation that we have the means of compelling him, walk in the grounds; sometimes he will not. I have tried all sorts of plans to get him out into the country, but nothing but actual carrying by three or four men would effect this.

Another lady, now under my charge, is subject to paroxysmal insanity; and though I am most strongly impressed with the necessity of air and exercise in her case, it requires such forcible measures to ensure it, that we believe it best to give the matter up; and as hers has become a chronic and a violent case, this is the less objectionable.

Another lady is always asking to go out when she is in her room; and yet, when entreated to go out into the grounds, it takes sometimes two or three strong nurses to carry her out; and when asked to come in, an equal number to bring her in. In chronic cases the resistance is often great and resolute, and the probability of good so little, that it seems the only plan to allow the patient to have to a certain extent his own way. Difficulties of this nature, of course, any one conversant with the insane knows to be without end, both in number and variety.

Good diet.—With regard to the third vital stimulus to which I have referred, namely, good diet, I shall say but very little here, as it is a matter upon which all who take the asthenic view of the pathology of insanity must agree; and about which, when this agreement is arrived at, little is to be said. All enlightened physicians in the present day will, I presume, prefer the invigorating influence of good diet to any more theoretic and arti-

ficial modes of improving their patients' health. Bitter tonics are often useful as a means of improving the appetite, and setting right the perverted state of the chylopoietic viscera; and with this intention they are not to be despised; but our great means are those which nature points out, and which a patient's own sensations indicate too often in vain.

It would be well for those who have the insane under their charge to study a good digestion scale; and I know of none more likely to be a true dictionary of the mysteries of digestion than that of Mr. Beaumont's, which is derived from his experiments upon that most interesting case given us in the person of St. Martin.* No one has had, like him, the happy opportunity of watching with similar accuracy the operations of the stomach, and the time taken for chymification. An excellent exposition of this scale, as well as many most interesting observations upon it, are given in Dr. Carpenter's work on Human Physiology, page 362. Boiled meats are shewn to be more easy of digestion than roast; mutton and beef much more so than chicken in any shape; tripe, venison, pig's pettitoes, &c. much quicker of digestion than even beef or mutton; veal and pork, each very long of digestion, &c. &c.

I have made an analysis of the most important articles of the table given by Dr. Carpenter; and if we reckon by minutes, it would stand thus:

1. Tripe requires for chymification . . .	60
2. Fresh salmon or trout, boiled . . .	90
3. Venison, broiled	95
4. Sago, boiled	105
5. Milk, boiled; eggs, raw; liver, broiled .	120

* For the information of any one not acquainted with this case, I would explain that this patient, St. Martin, suffered from a large fistulous aperture opening into the stomach; which was so patent that pieces of meat, having been tied to the end of a string, and having been weighed accurately, could be placed in the stomach and taken out and examined at any time during digestion. And thus observations were made continually as to the comparative effects of the gastric juice, &c. on each description of food.

6. Potatoes, roasted; boiled gelatine . . 150
7. Beef, boiled 165
8. Boiled eggs; chicken-broth; boiled mutton . 180
9. Mutton, roast 195
10. Beef, roast; cheese; bread . . . 210
11. Veal, broiled 249
12. Veal, roast; pork, boiled 290
13. Pork, roast 315

But all these reckonings are liable to much alteration, according to the quantity taken, the period since the last meal, the amount of previous exercise taken, the state of health and the weather, and the state of the mind of the eater.

Water.—I will only add a few words on the subject of water applied externally. I have found tepid bathing and the cold douche very beneficial in insanity: the latter is chiefly useful when there is much excitement and heat of head. I generally question patients when they get well as to the sensations produced by this and other remedies employed; and from the answers given to me, I judge that cold water, let fall from a height, affords often the greatest comfort. I have seen it send patients to sleep with magical rapidity, who were previously in the most wild delirium. I have great trust in its efficacy generally. It does not answer with some patients, however; for though it may quiet them for the moment, it seems to cause a greater reaction afterwards. I should generally try it when great heat of head exists, with much excitement; except in very old and infirm cases, or in cases where there is some peculiar and manifest objection to its employment. What I mean by the douche is not, however, that large and heavy fall of water which the French have employed so much, and which is too heroic a remedy to be lightly employed. A very large sponge filled, and held near the ceiling, and a small column of water let fall from that height continuously from the most dependent part of the sponge, for ten minutes or a quarter of an hour, at different

periods through the day, according as the head is hot, &c. answers the purpose very well.

The tepid bath I have found very soothing before bed-time; and I have known it procure sleep, where sleep had been a stranger for a long period. In the case of a lady now under my care, this remedy has night after night procured sleep, which she had not enjoyed before for a long time. At first its effects in allaying her excessive nervous irritability *during the day* was most marked; but this, unhappily, is not the case now. The shower bath night and morning is also a great relief to some patients. A gentleman, mentioned before in these pages, used to wish for them continually; and he had them with advantage two or three times a day. He said that the effect was to relieve a heavy sensation in his head, which seemed to amount at times to pain, and which was immediately relieved by cold applications of any sort.

I will not continue observations, trite as these must be to all who know anything of the treatment of insanity: my chief hope and my best apology in making them to the extent to which I have already carried them, is, by the detail of my own experience, to add to the importance of that treatment which is already recognised,—and to raise to their proper place among the other remedies for insanity the four great vital stimuli, air, exercise, food, and water.

Conclusion.—And now, my kind and learned reader, bear with me a little longer while I speak one word on nature and her gifts. You have borne with me through a long and tedious descant upon physics and metaphysics; you are perhaps weary of such brooding and analysis; I would therefore touch a happier chord before I leave you. Those little words air and exercise have occasioned many thoughts: what do they recal by their associations but the influence of nature in all her beauty and refreshing power upon our tired and exhausted frames? He who has sat up through the night watching by the sick bedside, who has hour after hour gazed on the dying embers, or listened to the moan

of pain; whose own body and mind at last feels shattered with watching and anxiety, knows well the effect of the glowing walk along the wild and open heath, of the play of the morning air, and the sensations produced by converse with nature again. The effect is not of poetic origin alone, it is a practical reality; and he who studies the relief of those who suffer from nervous diseases should know it well. We cannot listen to nature's voice too anxiously; we cannot be sufficiently jealous of allowing theoretic science and learned egotisms to carry us out of her track. But if the influence of nature and her gifts be such upon the watching friend, what are its effects and associations upon the sick man himself? The very thought of these things is like a light illuminating the solitude of a dungeon. He who has explored those mysterious solitudes of the earth, the caverns in Derbyshire, may remember, perhaps, a sense of oppression, ever increasing, as he descends deeper and deeper into those gloomy regions. The faint light of his conductor would shew him that he was indeed passing through a dismal solitude; and he might well say, in the language of Scripture, "I went down to the bottoms of the mountains; the earth with her bars was about me for ever!" The rush and hollow sound of waters as they fall around him into deeper caverns still, might well occasion him to feel that chaos surrounded him, and that he was cast out and forsaken! when suddenly, as if by magic, a crown of lights is raised up into the solitudes above! All is changed in a moment. The eye turns with instinctive fondness to those glowing stars; what appeared the chamber of death is changed into a glittering room; the terrific fall of waters becomes a beautiful cascade; chaos seems to have departed, and hope returns. Such as those beautiful lights are to the adventurer, the associations and the *effects* of nature's gifts are upon the sick and ill at ease: indeed, far more; for no temporary gloom can equal the shadow cast upon the mind of him whose nervous system is distressed, and nothing can seem

so bright as the associations and sensations of returning health.

And let me add, in conclusion, a reflection, which the circumstance that these remarks refer to the distresses of the mind peculiarly justifies, and which the analogy, just given, almost forces upon the attention, namely, this,—that if the traveller—his journey through earth's solitary places, his joy when the light breaks in upon his gloom, his sadness when he perceives that light expiring—remind us of man's sojourn upon earth,—the trials of his life, the solace permitted in the right use of nature's gifts, and the regrets experienced when these comforts are taken away; if, I say, these vicissitudes of the adventurer remind us of the changing scenes of life's fevered dream, and a sense of cheerlessness is left upon the mind, this most happy thought remains, that as the traveller can cast away all the gloom of the cavern, its pleasures and regrets, by the knowledge that they are but temporary, and that by retracing the dim and rugged path by which he descended, he can regain the portals that open to life and home once more; so the man of devout mind can derive lasting consolation from the thought that, when life's journey is over, when the worst and the best has been tried and found wanting, an entrance is granted to him into a home more blessed and enduring far, than this world can ever offer.

NOTE ON PHRENOLOGY.

It will be seen, in the foregoing remarks, that I speak of different sensorial centres: in other words, that I take a partially phrenological view. I state my belief that the nervous matter, allotted to be the instrument of the various broadly distinct mental faculties, has certain divisions in accordance with this general division of the faculties; that, for example, the instinctive and emotional faculties have one seat; the intellectual faculties of judgment, reason, and volition, have another;—but it will be seen further, that though I allow this division so far, I dissent from the details of the phrenologist, when he tries to fix the localities of the minute subdivisions of these various functions; and I do this on the ground of what (to use my own words) appear to me invincible arguments against the details of phrenology.—Vide page 12.

I propose, therefore, now to say a few words on this subject, and state why it is that I refuse ordinary phrenological distinctions, and yet think some distinctions necessary.

I. My reasons for objecting to phrenological distinctions are contained in the sentence just referred to (page 12); but as this sentence is perfectly unintelligible to any one but a physiologist, I must give a brief explanation of it. The phrenologist (for whom I entertain great respect, while I cannot accept all his conclusions) professes to be able to state, from various elevations on the surface of the head, what the qualities of the mind are. He does this on the supposition that the elevations on the scalp

correspond with the elevations on the surface of the brain; that the brain is divisible into certain known compartments, or is, (as it would seem,) an aggregation of little sensoria; that the whole brain is engaged equally in mental phenomena, though in different mental phenomena; that the relative size of these little sensoria indicates their capacity, &c.; and that this relative size is demonstrable by the surface. Now the arguments which are, to my mind, incontrovertible against these theories, are derived from anatomy, physiology, the results of disease in the human subject, and of experiments on animals; and lastly, from comparative anatomy:—the two former seem to shew us how impracticable it is to arrive with any accuracy at the conclusions of phrenologists, and the latter sciences offer, in my opinion, positive arguments against their conclusions.

1st. Anatomy proves that the surface of the brain does *not* correspond with the surface of the skull; for the skull is not only considerably thicker in some parts than others, not only has cavities between its laminæ in some parts, and not so in others, but the relative thickness and the relative size of these cavities are very various in different individuals; and you have no means of determining what is the state of these things in any individual.

2dly. Were the above argument wholly set aside, there are physiological considerations quite sufficient to involve phrenological data in uncertainty; for, in the first place, it is now the generally-received opinion, that the whole of the brain is not the true sensorium, but only its cortical substance or grey matter. If this be so, and if size be an essential index of capacity, how can the phrenologist prove the thickness of this cineritious neurine by feeling its surface? Even if we had our hand on the brain itself, we could form no judgment of this, much more when it is encased in the skull; and even if it were asserted that this grey matter were always of the same thickness, we know that the depth of the convolutions in different brains varies very much;—and even then, could we accurately determine the quantity of the grey

matter on the upper and convex surface of the brain, we could have no idea of the quantity disposed around the base of the brain, and in the ventricles. This theory, in short, of the grey matter of the brain being the only true sensorium, seems to exclude any hope of being able to tell with accuracy the relative size of the imaginary compartments of the brain given by phrenologists. But size or quantity of cerebral matter is by no means to be looked upon as the only index of the capacity of the brain; for though the general form, and a certain size, are of the greatest importance, yet it is most probable that the *quality* of the texture of the brain, its chemical composition, the character of its vital stimuli, &c. have much more to do with its powers than simple size.

3dly. Disease or injury in the human subject indicate that the distinctions drawn by the phrenologist are at least uncertain, and that when certain parts of the brain are removed, the faculties which they are thought to represent are by no means *specially* suspended. Thus, if cancer devours gradually a large part of the hemispheres of the brain, does loss of such distinct faculties as the phrenologist gives, accrue? And I believe it may be said with truth, that as the mind possesses a far greater unity of purpose than any one could believe his own mind to possess, after poring over its different faculties as given by moral philosophers, so the brain possesses a far greater unity and simplicity of function, than he who places his trust in phrenology could ever hope again to believe possible. A liberal analysis is, I grant, a most useful branch of science, and necessary for the investigation of a subject; but we must be sure of our grounds before we draw positive conclusions.

4thly. Experiments on animals prove these facts much more clearly and unexceptionably than the casual and tardy operation of disease or accidental injury in the human subject; and though I repudiate the unnecessary cruelty which has far too often been practised in this department of scientific observation, I cannot but believe that great strides in knowledge have been

made by these experiments. The brains of animals are (so far as they are developed) upon the same type, both anatomically and physiologically, as that of man; and in the same way as the eye or the ear of an animal corresponds to the similar organs in the human species. No objection, therefore, can be raised against this mode of comparison. Now it is found, on the removal of certain parts of the brain, that certain *individual* faculties of the mind are not lost, but rather certain general faculties of a more generic nature: thus the gradual removal of the hemispheres causes the gradual loss of the intellectual faculties generally, such as the will, the judgment,—not one effect of the will or the judgment, &c. Again, if we remove the cerebellum, the loss is *not* that of certain other faculties of the mind, but of the power of harmonizing and combining the motor forces; and when we come near the base of the brain, the citadel of life is invaded (owing to the fact that certain essential vital acts owe their existence to the functions of this region), and the least injury of this region is an immediate intrusion on life itself. I cannot, however, leave this subject without entering my protest against the thoughtlessness of those who seem to think it necessary that they should each and all of them practise these necessarily cruel experiments for themselves, when they gain nothing more by doing so than the confirmation (if they are skilful enough in their manipulations) of facts already well established.

And lastly. Comparative anatomy appears not only not to sanction the subdivisions of the phrenologist, but to indicate frequently directly opposite conclusions; for animals which are known to have a certain instinct and mental faculty very strongly, have a remarkably small development of that cerebral part which is thought to represent this faculty; while the same animals have an equal development of those parts of the sensorium which are supposed to represent mental faculties in which they are peculiarly different. Thus the frog is a very salacious animal, but has a very small cerebellum (where the organ of

amativeness is supposed to be). Again, the cock and the hen have an equally large organ of philoprogenitiveness, and yet the hen is very fond of its offspring, and the cock not at all so; &c. &c.

In offering the above explanation of my views on the subject of phrenology, I am perfectly well aware that it is but a brief and crude one; but still it is such as I hope may render the sentence I have referred to in this treatise somewhat intelligible to those not accustomed to these matters. I do not, of course, put it before the learned as a complete argument, as I well know that arguments are and can be raised (by those who have studied the matter deeply) on some of the above statements, which would require counter-arguments to oppose them. But a prolonged investigation, such as this, would be rather foreign to my present purpose. I can decline entering into it with the more confidence, that the more I sift these counter-arguments, the more reason do I feel to adhere to the opinion I have already given;—and, what is of far more importance than this, I believe it cannot be contradicted that the best physiologists of the present day would generally agree with me in this conclusion. Phrenologists are, I believe, rather afraid of physiology, comparative anatomy, and the kindred sciences; and if this is the case, it is, in my opinion, alone sufficient to render their system more eccentric than is desirable in any science.

II. But, on the other hand, though I cannot allow of such minute subdivisions as the numerous organs over the orbit (a part where the bony case of the brain is peculiarly full of idiosyncrasies and differences as regards sinuses between the outer and inner laminæ of the skull), I fully agree to the general facts of figure and size, and believe that the great names of Gall and Spurzheim, as well as other phrenologists since their time, are well worthy of honour, for having drawn our attention so forcibly as they have done to these matters. I believe that

what we understand by a well-formed head is likely to represent a superior mental development; and that the anterior and upper parts of the brain have more connection with intellectual acquirements than the posterior parts. But this is a phrenology to which all physiologists would subscribe, and is answerable to a certain general division of the brain, which is supported by all the kindred sciences. For such a physiological division I would refer to Dr. Carpenter's work on Human Physiology, page 228.

Some such distinction in the different seats of mental acts we must deem it necessary to make; not only because we find that, under certain conditions of either health or disease, one set of faculties is in full or even over-active vigour, while others are suspended, as in dreaming, &c., but that we find (on investigating the physiology of the animal kingdom in its various grades, and comparing it with that of man), the three centres, or compartments of the brain, namely, that devoted to intellectual, that devoted to instinctive, and that devoted to simply reflex acts, are so separate and distinct from each other, that the lowest animals may be thought only to possess the last compartment of the brain in any perfection (and consequently might be considered to be little more than vegetables), while the highest alone possess all three.

THE END.

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